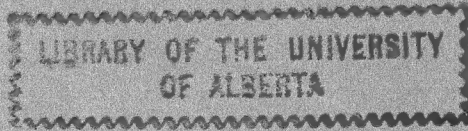


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ANNUAL REPORT
OF THE
DEPARTMENT OF AGRICULTURE
OF THE
PROVINCE OF ALBERTA
FOR THE YEAR
1941

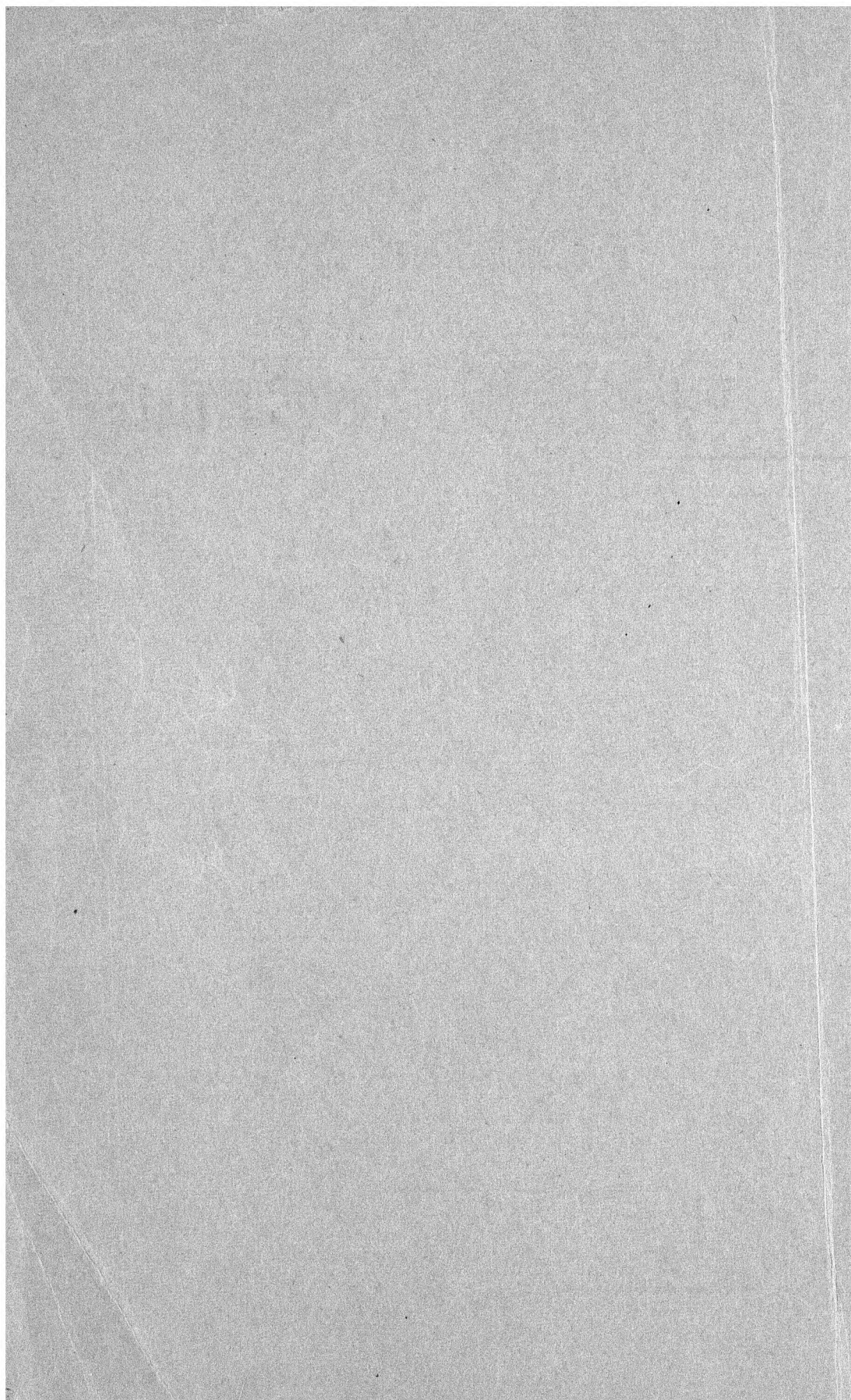
PUBLISHED BY ORDER OF THE LEGISLATIVE ASSEMBLY



EDMONTON
PRINTED BY A. SHNITKA, KING'S PRINTER
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TO HIS HONOUR,

J. C. BOWEN,

Lieutenant Governor of the Province of Alberta.

SIR:

I have the honour to submit herewith the Report of the Department of Agriculture for the year 1941.

I have the honour to be, Sir,

Your obedient servant,

D. B. MACMILLAN,

Minister of Agriculture.

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DEPARTMENT OF AGRICULTURE
1941

HON. D. B. MACMILLAN, *Minister of Agriculture*

Heads of Branches

J. R. Sweeney, Deputy Minister and Superintendent of Schools of Agriculture.
O. S. Longman, Field Crops Commissioner.
A. A. Campbell, Acting Live Stock Commissioner.
P. R. Talbot, Provincial Veterinarian.
D. H. McCallum, Dairy Commissioner.
C. W. Traves, Poultry Commissioner.
T. Lloyd Jones, Animal Pathologist.
W. G. le Maistre, Provincial Apiarist.
R. M. Putnam, Director of Extension Service.
S. H. Gandier, Supervisor of Junior Activities.
E. B. Swindlehurst, Acting Supervisor of Relief Settlement.
James Murray, Principal, School of Agriculture, Olds.

REPORT OF THE DEPUTY MINISTER

(J. R. SWEENEY)

THE HONOURABLE D. B. MACMILLAN,
Minister of Agriculture.

SIR:

I have the honour to submit herewith a report covering the activities of the Department of Agriculture for the year 1941.

The year 1941 was not quite up to expectations in the field of agricultural production, and owing to unfavourable growing conditions a crop yield considerably below the average for the Province was recorded. While crop production was below normal, there was an increase in the sale of live stock products, and the total value of all agricultural production was \$194,758,080.00 compared with \$209,741,864.00 in 1940.

As a result of the Federal Wheat Acreage Reduction Policy and payments for summer fallow and substitute crops, the wheat acreage in Alberta was reduced from 8,667,000 acres in 1940 to 6,653,000 acres in 1941. The lower seeded acreage together with the abnormally low yield of 13.5 bushels per acre, gave Alberta a total of 88,500,000 bushels of wheat, which is the lowest wheat production reported since 1937.

The acreage of coarse grains was increased by 800,000 acres and flax increased from 42,000 acres in 1940 to 150,000 acres in 1941. It will be necessary to direct attention to the need for further increases in the acreage seeded to barley in order to ensure feed supplies for the expanding hog population.

In general, 1941 was a banner year for the live stock industry. Increased marketings of live stock and higher price levels for live stock products resulted in a record total value of \$61,846,095.00 for the year, compared with \$45,134,000.00 in 1940. In response to the demand for more bacon for Britain, Alberta marketed 1,947,000 hogs and is now producing 26% of the hogs marketed in Canada. It is encouraging to note that the quality is showing improvement each year.

The Live Stock Improvement policies have been continued, and a large number of farmers are disposing of inferior sires and obtaining approved sires under the assistance plans conducted by the Department.

There is an increase in the population of beef cattle and sheep and a little more interest in horses than could be reported last year.

The feed situation is not satisfactory in the eastern sections of the Province, and some reduction in live stock has been reported. The open fall has relieved the situation considerably, and the breeding stock has been retained in those areas where the shortage of fodder was expected. In general, a light hay crop was harvested.

Dairying showed further expansion during the year, with new all-time records of production reported in creamery butter, factory cheese and evaporated products.

Beekeeping is on the increase, and more than 2,400 beekeepers report a total production of 3,120,000 pounds of honey.

The demand for eggs to meet the requirements for Britain has stimulated an interest in poultry, and considerable expansion is now taking place which will result in increased production for 1942. There has been an increase in hatchery capacity, and the number of flocks blood-tested under the "approval" plan has been increased. The work of blood-testing flocks is placing a heavy strain on the staff of the Poultry Branch, but the service is bringing about a reduction in Pullorum disease.

The School of Agriculture at Vermilion was closed for the duration of the war period, and the second-year students are completing the courses in Agriculture and Home Economics at Olds.

The Agricultural School at Olds is filled to capacity, and during the summer months an increasing number of short courses, conferences and meetings are held there. There is a need for increased dormitory accommodation, and the construction of an agricultural engineering building is urgently required.

The Provincial Horticultural Station at Brooks is making a valuable contribution to farmers of the Province through the interest being developed in fruit growing and the testing of varieties in demonstration orchards throughout the Province.

Youth training courses in farm mechanics were continued under the Dominion-Provincial Youth Training Plan, and there is a growing need for more instruction in farm engineering.

Women's extension work and girls' clubs show sustained interest, and the amount of work undertaken is limited by the personnel and funds available for this service. An expansion of services for rural women and girls is urgently requested by rural organizations.

I have to report that Major C. A. Lnydon, Live Stock Commissioner, on leave with the military forces, was killed in action at the siege of Hong Kong. Major Lyndon was a valued member of the staff, and the Department, as well as the live stock industry, sustained a great loss.

Mr. W. J. Elliott, Supervisor of Youth Training and Junior Activities in the Extension Branch, retired on superannuation during the year. Mr. S. H. Gandier, Principal of the Vermilion School, succeeded Mr. Elliott.

Mr. R. J. Milligan, District Agriculturist at Lethbridge, was given leave of absence to join the Air Force, and was replaced by Mr. S. S. Graham.

Mr. W. H. T. Mead, District Agriculturist, Camrose, was promoted to the position of Live Stock Promoter in the Live Stock Branch, and was replaced at Camrose by Mr. J. L. Kerns, of the Field Crops Branch.

Mr. D. A. Andrew of the Vermilion staff was appointed full-time District Agriculturist, with headquarters at Vermilion.

Mr. T. W. Hall, District Agriculturist at Red Deer, was granted leave of absence to join the military forces, and was replaced by Mr. J. E. Price, Instructor in Animal Husbandry at the Agricultural School, Olds.

Mr. N. N. Bentley, of the Vermilion School staff, was appointed District Agriculturist for the West Edmonton territory.

Mr. Euclide Hebert was appointed District Agriculturist at McLennan, and Mr. G. G. Golberg was stationed at Athabasca for the summer months.

Mr. F. F. Parkinson, of the School of Agriculture, Olds, was stationed for a short time north of the Peace River, with headquarters at Berwyn.

Mr. R. G. Gault replaced Mr. S. M. Silcox in the Dairy Branch.

Mr. T. W. Clarke, of the Dairy Branch, was granted leave of absence for military service.

Mr. Wilson Henderson, a graduate of the University of British Columbia, was appointed manager of the Oliver Poultry plant during the year.

The absence of a number of employees on military service and the continued demand for assistance with agricultural problems, places a heavy strain on the present staff. I wish to acknowledge their whole-hearted co-operation in carrying on the work under the stress of war conditions.

Separate and detailed reports of the various branches are attached herewith.

All of which is respectfully submitted.

J. R. SWEENEY,
Deputy Minister.

REPORT OF THE FIELD CROPS COMMISSIONER

(O. S. LONGMAN)

In many respects the 1941 crop year has been an historic one. During the early part of the season dry weather prevailed over most of the Province. Growth was slow and irregular. Later, however, rains improved growing conditions and a fair crop was produced in the northern, western and southern sections of the Province. Harvesting conditions were most discouraging. Heavy damage was done to the crop by wet weather, sprouting and general deterioration. The Peace River Block experienced one of the most unfavourable harvests in its history.

The year 1941 has witnessed the introduction of the Dominion Government's Wheat Acreage Reduction Policy as a means of overcoming the surplus production of wheat. It has been estimated that the policy has effected a reduction in wheat of 2,000,000 acres, while oats and barley show an increase of 800,000 acres, with the total seeded acreage of crop being reduced by approximately 1,000,000 acres.

There has been a very definite increase in the acreage sown to flax, and the sugar beet acreage has been maintained at a normal level. As a result of war conditions and the relatively low value of major crops, there has developed a keen interest in the production of minor crops.

The following table shows the estimate of field crops in Alberta in the year 1941, with comparative figures for 1940:

Crop	Area 1940 (Acres)	Yield per Acre (Bus.)	Total Production (Bus.)	Area 1940 (Acres)	Yield per Acre (Bus.)	Total Production (Bus.)
Spring Wheat	6,653,000	13.5	90,000,000	8,667,000	21.6	187,000,000
Oats	3,114,000	23.0	73,000,000	2,645,000	38.9	103,000,000
Barley	1,492,000	18.1	27,000,000	1,115,000	28.7	32,000,000
Fall Rye	110,800	13.5	1,500,000	100,200	16.0	1,600,000
Spring Rye	56,500	8.8	500,000	76,800	18.2	1,400,000
All Rye	167,300	12.0	2,000,000	177,000	16.9	3,000,000
Peas	1,900	14.0	27,000	1,200	19.2	23,000
Beans	1,400	11.0	15,000	600	16.7	10,000
Mixed Grain	36,400	17.0	619,000	28,900	27.7	800,000
Flaxseed	150,000	7.3	1,100,000	42,000	10.1	425,000
		(Cwt.)			(Cwt.)	
Potatoes	23,500	65.0	1,528,000	25,500	73.0	1,862,000
Turnips	2,300	100.0	230,000	2,800	95.0	266,000
		(Tons)			(Tons)	
Hay and Clover	452,000	1.30	588,000	398,700	1.60	638,000
Alfalfa	138,000	2.0	276,000	108,700	2.40	261,000
Fodder Corn	3,900	3.5	14,000	2,400	4.60	11,000
Grain Hay	1,000,000	1.3	1,300,000	1,000,000	1.80	1,800,000
Sugar Beets	23,800	12.48	297,000	23,900	14.00	334,000

FORAGE CROP POLICY

The need for forage crops on Alberta soils and their value to farmers growing them, prompted the Alberta Field Crops Branch to continue with a forage seed distribution policy in 1941 without assistance from the Dominion Government.

During the years 1937-40 (inclusive) this Department, with the aid of the Dominion Government, distributed approximately 710,000 pounds of forage seed. The total distribution under the policy in 1941 reached the all-time high for any one year of 338,373 pounds. New policies were extended to 11 municipal districts, and nine new local improvement districts were given assistance in the purchase of seed.

A summary of seed distributions to date, is as follows:

Kind of Seed	Aver. Price		Pounds Distributed	
	1941	1941	1940	1937-40
Alfalfa	.18c	115,689	59,118	187,973
Crested Wheat	.13c	43,915	27,807	82,391
Brome	.13c	90,871	61,988	185,581
Sweet Clover	.05c	39,950	51,720	167,947
Red Clover	.18c	13,763	5,876	20,647
Alsike Clover	.18c	10,959	4,350	16,679
Timothy	.07c	24,710	11,537	44,844
Red Fescue				50
Red Top	.25c	490	450	455
Slender Wheat Grass	.12c	100		100
Alsike-Timothy mixture	.10c	4,926		
Totals		338,373	222,238	706,667

The value of seed obtained by farmers from the Department in 1941 was approximately \$44,500, while the total value of seed distributed since 1937 is in excess of \$135,000. The policy furnished seed for about 2,000 farms in 1941, and has in all supplied seed to approximately 14,000 farmers.

Under agreements in 1941, 37 municipal districts completed their seed distribution, and many ordered additional seed at cost where quantities greater than the amount obtainable under the policy were required. It will be noted that alfalfa is by far the most popular legume, and that the distribution of brome seed is more than double that of any other grass. These two crops are most universal in their adaption; others have special characteristics for certain areas within the Province.

The demand for seed of alfalfa and brome grass has come from all sections. Municipal districts, predominantly in the grey soil area, have had the largest orders for legumes. Requests for crested wheat have been primarily from the prairies. Only small quantities of red top and slender wheat went out from this Department. The demand for sweet clover has been considerably reduced, and no red fescue was ordered. Mixtures of grass and clover were approved by the Department where crops were grown for forage purposes. Where the crop was to be used for seed purposes, only first class seed was advised and mixtures were never recommended.

WEED CONTROL

The spread and increase of noxious weeds continues, and their cost to agriculture in Alberta, measured in terms of production expenses and reduced yields, increases in proportion.

The spread of serious perennial weeds such as field bindweed, hoary cress, leafy spurge and Russian knapweed has been mentioned in recent reports. Their eradication on a large scale by cultivation would surely result in soil erosion problems. Their spread, therefore, is a powerful factor prompting inquiry into the habits of specific weeds, so that efficient as well as effective tillage and cropping practices may be adopted to control or eradicate them.

Efficient methods of eradicating persistent perennial weeds have not yet been demonstrated in Alberta. We know little about the germination of weed seeds under prevailing soil and climatic conditions. However, inquiry into these problems have now begun at the Dominion Experimental Farm, Lethbridge, and the Dominion Seed Laboratory, Calgary. The functions of the Field Crops Branch are administrative, and it takes no active part in experimental work. Between it and the institutions mentioned, however, the closest co-operation exists, and all ideas on the matters under investigation are

exchanged. The opportunity that is afforded us to indicate those problems which require investigation is appreciated.

It is the responsibility of this Branch to promote and co-ordinate (1) the enforcement of weed legislation, and (2) work of an educational nature with respect to weed control.

Local administrative bodies are responsible for the administration of weed legislation, and their inspectors serve as a direct contact with farmers in the educational effort. The problem which arises was discussed in our report for last year, as follows:

"The problem of securing the adoption of a uniform weed control policy throughout the Province is a difficult one. Much remains to be done in this regard. The effort of many municipalities is excellent. In general, those that spend the most money conduct a considered and efficient weed control policy. Where only a few dollars are spent, it is wasted on an aimless programme. In the districts spending the least, direct losses to farmers due to weeds are increasing annually. On the other hand, it has been amply demonstrated that a high degree of weed control can be secured where there is a will to do the work."

To overcome this difficulty, it might some time be required that municipalities shall appropriate sufficient moneys (a proportion of assessed valuation) for the conduct of weed work. Further, that only persons who are approved by the Department of Agriculture should be appointed as weed inspectors.

A second factor which seriously disturbs the development of the weed policy is the problem of control on Crown lands. Perennial sow thistle and Canada thistle infest most lake shores in the central portion of the Province. Moreover, the Crown controls considerable marginal land in the grey-wooded soils area which was at one time settled but is now abandoned, due to enlistment or return of men to industry in the war. There is no attempt to control weeds on these divers Crown lands. Unless corrective measures are soon adopted, it will become impractical to enforce weed legislation with respect to perennial sow thistle and Canada thistle.

Tartary buckwheat heavily infests farm lands in the north-central part of Alberta, and has been reported in the Peace River and at Medicine Hat. Large quantities of threshed grain are so polluted as to grade "rejected" and "sample mixed grain", and are sold at prices on a par with its value as live stock feed. A preliminary inquiry made by this Branch indicates that the task of eradicating tartary buckwheat will be a difficult one.

Seven assistant weed supervisors were engaged for the period from May 21st to September 10th. Supervisors' headquarters were Lethbridge, Calgary, Wainwright, Edmonton, Clyde, St. Paul, and Grande Prairie respectively. Through them, service with respect to weed control is made available to municipal councils, weed inspectors and farmers.

Weed inspection was provided in local improvement districts by the appointment of 30 inspectors, appointed by and directly responsible to this Branch. The work was financed to the extent of \$12,540 from appropriations made from funds of the districts concerned and \$4,700 granted under special warrant.

A total of 315 municipal district weed inspectors were appointed in 1941. They were paid approximately \$40,000. The appointment of one inspector in a district is strongly recommended,

and 76 councils followed the practice. A number of inspectors are directed to act on complaint or only after specific instructions from the council. This method is very unsatisfactory, since it does not provide either adequate or uniformly fair treatment to all farmers. Moreover, the practice does not satisfy the requirements of The Noxious Weeds Act.

For the instruction of weed inspectors and others interested, two-day courses on weed problems were held in the early spring at Red Deer, Calgary and Edmonton, respectively. In addition, members of the staff of this Branch addressed gatherings at field days and meeting on the same subject in every part of the Province.

A total of 30 complaints for failure to destroy weeds as provided in the Weeds Act were taken to court. Of this number, two charges were withdrawn and three dismissed, while 25 were convicted of the charges as laid and fined a total of \$176, in addition to the costs of court action.

In 1941 our publication, "Weeds of Alberta, Their Eradication and Control," was partially revised and reprinted. The same treatment was given "Suggestions to Weed Inspectors," in which the duties of weed inspectors and the responsibilities of rural municipal councils with respect to weed control were emphasized. Pamphlets, weed posters and other miscellaneous material were also distributed.

PEST CONTROL

Grasshoppers.

The 1941 grasshopper outbreak proved to be the lightest experienced since 1930. During the past three years of comparatively good growing conditions, the grasshopper population has been steadily reduced. This year damage was negligible.

A vast migration of grasshoppers from the extremely heavy infestation in the south-east corner of the Province occurred in 1940. This fanned out to the west, north and northwest, covering much of southern Alberta, and consequently a heavy outbreak was expected to occur this year. Fortunately, however, due to some phenomenon, the migrants laid surprisingly few eggs, as was shown by the fall egg survey.

Grasshoppers were present in greater than normal numbers over approximately 20,000,000 acres this year, as predicted. Preparations were completed to meet a "moderate" outbreak over approximately one-third of this area, largely in the south-western part of the Province. If normal climatic conditions had prevailed in the spring, considerable damage may have occurred. However, the egg hatch was delayed, and the outbreak did not occur until crops were well advanced and well able to withstand their feeding, and damage was not noticeable until late summer.

Very little grain was seeded into stubble this year except where the fields had been shallow cultivated the previous fall to destroy grasshopper eggs. This factor greatly reduced the risk of damage, and consequently the demand for poisoned bait.

Heavy populations of adult grasshoppers were present over a large part of southern Alberta in late summer. Cover crops seeded on summerfallows in the south-west to prevent soil erosion were heavily attacked, but the pests were successfully disposed of by the use of poison where farmers undertook to use it. Where no poison was used, cover crops were destroyed and soil was badly drifted by

late fall gales. However, several thousand acres of soil were saved by farmers who undertook to protect their cover crops.

In spite of the fact that poison bait was made available wherever grasshoppers were present in appreciable numbers, and farmers were urged to use it, large populations were permitted to mature this fall. Consequently, there are many more eggs in the soil now than there were a year ago, and it is expected that the 1942 grasshopper outbreak will be much more serious than this year.

The following is a tabulation of pertinent data respecting the 1941 grasshopper campaign:

Acres of land in the area	21,000,000
Acres of crop land menaced	127,000
Number of stations operated	28
Bushels of poisoned bait spread	33,000
Number of farmers receiving bait	375
Estimated acres of crop destroyed	9,000
Estimated acres of crop saved	26,000

Wheatstem Sawfly.

The persistent extension of Alberta's sawfly outbreak continued this year. Moreover, throughout most of the affected territory the sawfly population has continued to build up. Almost the entire wheat producing portion of the Province is now infested, while more than 50% of this area experienced losses in 1941. Although it is very difficult to calculate the damage due to sawfly, entomologists have estimated a loss of approximately 9,500,000 bushels of wheat. To find 25% of the stems in a field cut down was commonplace through much of south-eastern Alberta. Losses of from 50% to 75% were suffered by some farmers. The greatest damage resulted in the territory running southward from Rosebud and Rockyford, embracing the Arrowwood, Milo, Carmangay and Nobleford districts, and extending from 20 to 40 miles east and west.

Several factors have contributed to the extensive damage this year, aside from the greater population of flies. During the period when oviposition was occurring, clear, calm weather prevailed, encouraging a heavy egg crop widely dispersed through the fields. Unfavourable weather delayed harvesting at many points, permitting all cut stems to fall down. Moreover, continued rains beat fallen stalks down so flat that little of it could be recovered, as it sprouted on the ground and was a total loss.

The wheatstem sawfly is not vulnerable to attack by poison. Any control must be accomplished through cultural practices, and depends entirely upon the farmer being willing and able to adopt recommended control technique to his general farm operations. There are several natural factors which render impractical the control measures now recommended. The only effective perennial grass for sawfly traps is brome grass, which cannot be grown successfully in most of the sawfly area. Due to the hazard of soil drifting over most of this area, strip farming is a necessity. Grain in strips can be attacked from both sides by the flies, and damage occurs throughout the field. In strip farming districts, farms are known where 75% of all wheat stalks have been cut down. No control acceptable to such districts has been formulated to date, and there is urgent need for intensified research to find a truly practical remedy.

Say's Grain Bug.

This pest was present at many points in the southern part of the Province again this year. Damage to grain from Say's bug was

heavier this year than at any time in the past. Loss is estimated, by Dominion entomologists, at more than \$100,000 this year. The insect developed earlier than usual, so infestation occurred when wheat was at a particularly vulnerable stage. The Lethbridge, Taber, Retlaw and Turin districts were most heavily attacked, while most of the Province from Calgary south experienced some trouble. In some districts where large acreages of land have gone back to Russian thistle, adjacent crops of wheat were heavily attacked. Here yields were reduced by from 10% to 50% and much of the wheat graded "feed". It now appears that Say's bug merits greater attention, otherwise it may become a serious pest in the drier parts of the Province.

Cutworms.

The Pale Western Cutworm caused only slight damage to southern crops. The expected severe outbreak was largely thwarted by satisfactory moisture conditions. Where some early damage did occur it was almost completely repaired by heavy stooling and subsequent good growing weather. Farmers in areas most susceptible to Pale Western Cutworm attack are being encouraged to adopt approved control methods. In some cases rather severe threats to wheat fields were frustrated by the delayed seeding technique.

The red-backed cutworm caused some local losses to garden crops in the northern half of the Province, but no definite control programme was required.

Wireworms.

Some thinning of grain crops by the prairie grain wireworm occurred again this year on medium to sandy loam soils. Losses of from 10% to 25% occurred in wheat on summerfallow in a few districts, while some thinning of sugar beet stands occurred in southern Alberta. Satisfactory growing conditions repaired much of the early damage to grain crops.

Beet Webworm.

Much of the Province experienced the heaviest outbreak of beet worms this year it has ever known. Cereal crops, as usual, were not attacked, but clovers, alfalfa, sugar beets, canning crops and gardens were heavily damaged over a wide area. Losses to gardens were suffered from the southern border to the Peace River area, and in many districts all available supplies of suitable insecticides were exhausted in control efforts. In many of the affected districts the beet webworm was previously unknown, and heavy damage resulted from the surprise attack. Control recommendations were widely distributed through the press from this office.

Although there was an extremely heavy moth flight over most of the Province this summer, it is impossible to forecast accurately the webworm situation for next year.

Colorado Potato Beetle.

For the second successive year the potato beetle has been troublesome over much of the Province. Damage occurred farther north than in any previous year, the pest having been identified at Athabasca in Township 6 and at Lessard in Township 63, and was reported from Calling Lake in Township 72. This shows a considerable northward spread. In southern Alberta damage was not great due to prompt control measures, but where the insect made

its first appearance this year many potato fields were defoliated, resulting in a reduction in yield.

Forest Tent Caterpillar.

Native poplar bluffs in northern and north-western Alberta were defoliated by this pest. The damage was about as great as in 1940 in the area from Ponoka to Athabasca and eastward to Wainwright and Vermilion. The effect on domestic shade trees and shrubs was slight. It is expected that the present outbreak, which has now run three years, will lessen decidedly in 1942.

Psyllids.

This menace to potato and tomato production in certain localities in southern Alberta has declined considerably in the past year. It has been felt that the psyllid yellows disease, as well as a certain type of necrosis which caused widespread damage to potato crops in 1938 and 1939, was being caused by psyllids. Heavy populations of these insects were found to be hibernating in greenhouses in Alberta, particularly in Medicine Hat, Calgary and Drumheller. A programme of extermination was subsequently inaugurated, and satisfactory results have now been achieved.

Systematic inspection and enforcement of control measures has resulted in practically eliminating psyllids from greenhouses. So successful has been the control that only one light infestation of psyllids was found indoors in 1941. This was effectively dealt with. Tomato and potato crops in previously infested centres are greatly improved. A close watch is being maintained, and it is expected that complete control can be obtained unless the psyllid becomes adapted to the rigours of our winters, permitting it to hibernate out of doors.

Rodents.

Although the prairie gopher took its customary toll of field crops again this year, the most serious local rodent outbreak was due to the Columbia ground squirrel. Farmers in some five municipal units in the extreme south-west portion of the Province have suffered serious losses due to this pest. Grain and fodder crops in the foothills adjacent to Pincher Creek and Lundbreck have been heavily attacked.

A programme was begun this year to assist farmers in local improvement districts to protect their crops from this rodent. Strychnine Alkaloid was made available at convenient points to be sold to farmers at reduced rates. Experiments were conducted to determine the best poison mixtures and suitable methods of attack. Farmers and municipal authorities were contacted and assistance was given in the organization of a community control campaign. Fairly satisfactory results were obtained in this first year of the project. However, it will be very difficult to obtain complete control since these pests have their origin deep in the foothills region to the west, from which many descend each year to prey upon crops and gardens.

Diseases.

The disease situation amongst most farm crops was about normal during 1941. No serious infection of cereal crops was reported.

Bacterial Ring Rot.

There appears to be some indication that progress is being made in the control of bacterial ring rot in Southern Alberta potato crops. This is, without exception, the most vicious infection ever to strike our potato industry, and any evidence that the rate of spread is being checked is encouraging when the infectious nature of the disease is fully realized.

The following table compares the situation as found by the 1941 survey with that prevailing in 1939 and 1940:

	1939	1940	Change 1939 to 1940	1941	Change in Past Year
Number of Townships in which ring rot was found	13	12	— 8%	16	+33%
Number of farms found infected	40	72	+ 82%	102	+33%
Acres of potatoes found infected	180	674	+275%	693	+2.8%

In 1940, 21 farms were inspected while this year's survey included 430 farms. Consequently, the increase in ring rot may be more apparent than actual, because some of the farms which were found affected this year in an especially complete survey may have been diseased in 1940, but were not visited this year.

The survey conducted this year was considerably more extensive and more thorough than that of 1940. Although difficulties were encountered which made positive identification of all infected fields impossible, it is felt that most cases of ring rot in southern Alberta were located and dealt with.

Definite steps have been taken to eradicate this disease. Growers with infected crops were forbidden to use any of their crops for seed. Control measures have been discussed with practically all potato growers in the area by letter, through the press, in public meetings and individual farm visits.

Assistance was given this year toward providing certified seed supplies, and growers were canvassed to encourage the use of pure seed stocks. The public are now becoming conscious of the seriousness of ring rot; due to departmental efforts it is felt that satisfactory co-operation by growers is being obtained and some control is now being achieved.

JUNIOR GRAIN CLUBS

In the crop improvement programme of the Province, Junior Clubs continue to be an effective agency. Excellent work has again been accomplished by means of introducing and multiplying pure seed grain of suitable varieties. Club members have demonstrated on hundreds of farms the superior value of registered seed over the common seed ordinarily used. These young farmers have learned the technique of successfully handling a seed plot, and have demonstrated a practical method of providing superior seed for the whole community at a low cost. Where older farmers, handicapped by lack of technical knowledge, were reluctant in using registered seed, junior farmers with their natural enthusiasm and curiosity have made remarkable progress.

Due to recruiting for war services, both the number of clubs and the number of members were reduced from the previous year. However, there was almost the normal quota of new members entering club work for the first time. The number of clubs and membership compare with those of 1940, as follows:

DEPARTMENT OF AGRICULTURE

	No. Clubs	1941	No. Clubs	1940
		No. Members		No. Members
Wheat	54	896	78	1,417
Oats	21	896	18	256
Barley	8	92	6	121
Potatoes	2	19	1	13
Flax	1	10	2	33
Totals	84	1,327	107	1,841

The 84 clubs operating in 1941 held some 250 official meetings, with a representative of the Department participating on the programme. District agriculturists supervise the organization of the clubs and provide guidance within their districts. Membership is open to young farmers between the ages of 15 and 22. Members in the first instance receive sufficient seed for a three-acre plot and pay a membership fee of \$3.00. Over 3,000 bushels of registered and certified seed were provided this year. Members are encouraged under Departmental supervision to multiply the seed and maintain its purity. The seed produced is used first on the members' farms, while the surplus soon finds its way to almost all the farms of the district. It is amazing how rapidly seed grain is increased. Crop reports from individual club members reveal that fully 160,000 bushels of superior seed were produced last year from their three-acre specially cared for plots alone, while millions of bushels were produced from larger fields descending directly from the original registered seed acquired by the members. It is estimated that each year well over half a million bushels of pure-to-variety seed is used as a result of the operation of Junior Grain Clubs. The general desire of farmers in many districts to change from unsuitable or mixed varieties to some pure or better variety has been met in a most satisfactory manner through these clubs.

Instruction is given in seeding, cultural practices, isolation, identification of weeds and their control, identification of grain varieties, how to determine the best stage of maturity for harvesting, curing of grain to maintain its natural brightness of color and brilliance of lustre, care in threshing, and finally in cleaning and grading the grain for seed and for exhibition. Field days are held in midsummer when crops are in head for demonstration in roguing. Many adults attend these meetings along with the youth.

Standing crop competitions are held for each club. All plots are scored and prizes awarded. Local seed fairs are held for each club in the fall, when further prizes are awarded. Each fall a free trip is given a team of two members from the club which wins the Provincial Grain Judging Competition. This trip is financed by the Canadian Council on Boys' and Girls' Club Work, Ottawa. This year the winning team representing the Drumheller Club was composed of William Cole and Calvin McGhee. In the National Grain Judging Competition at Toronto, the Alberta team won second place. There are eight competitions in the grain club programme. The educational value of these competitions cannot readily be overestimated. The chief values accrue not to the winners alone, but to the whole membership in striving in their local clubs to qualify in the various competitions. It is evident that club members get value out of their club work in direct proportion to the effort they put into it.

Several new features introduced into club work yielded pleasing results. In order to stimulate and direct study in crop improvement problems, a comprehensive set of questions was printed on the

folder files distributed to all members. The files also bore a full list of Departmental and University Farm bulletins where information regarding many farm problems could be found. Members were urged to use these folder files as a repository for saving for future reference, not only club publications, but also any agricultural clippings of value to them. Later examination of these files revealed that a surprising amount of useful and varied information had been collected. Crop reports were also completed by a large proportion of the members, showing length of time required from seeding to maturity, extent and nature of weed pest, disease or weather damage, and measures used to combat them; total yield, yield per acre and disposition of the crop. In computing the average yields reported for a thousand plots last year, it was found that club wheat plots yielded eight bushels more, oats 23 bushels and barley 12 bushels per acre more than the average yield of these crops for the whole Province. Club plot work points the way toward better farm practice in crop production.

Grain clubs were sponsored again this year by the following organizations: Wheat clubs, Alberta Wheat Pool; Oat clubs, United Grain Growers', Limited; Barley clubs, Canada Malting Company, Limited; and Flax clubs, Alberta Linseed Oil Company, Limited. The support given by these organizations in the matter of paying for part of the cost of the seed, providing prizes, trophies and free trips, has been of great value in stimulating general effort and maintaining interest in the work. Over 100 club members, each the efficiency prize winner from his club, were awarded a free trip to the Provincial Seed Fair and Agricultural Short Course held at Edmonton this year. It was the first time that all the efficiency prize winners were brought to one central point.

The Department of Agriculture trophy for the wheat club securing the highest average score in the inter-club standing crop competition was won for the second time in succession by the Drumheller Club, with the Dapp Club a close second. The Alberta Seed Growers' Association Trophy for the oat club securing the highest average score in the standing crop competition was won by the Northern Valley Club with St. Lina Club a close runner-up.

Club members are each year coming more and more to the fore in awards at the International Grain and Hay Show held annually at Chicago. During recent years, 10 world's championships and three reserve championships have been won by junior members as follows:

1933	World Championship in Oats	Ian Smith	Wolf Creek
1935	World Championship in Wheat	Jack Allsopp	Wembley
1937	Reserve Championship in Oats	Geo. Topolnisky	Andrew
1938	World Championship in Wheat	Lloyd Rigby	Wembley
	World Championship in Oats	Justin Rigby	Wembley
1939	World Championship in Oats	Wm. Skladan	Andrew
	World Championship in Wheat	Lloyd Rigby	Wembley
1940	World Championship in Oats	Paul Pawlowski	Vilna
	World Championship in Wheat	Lloyd Rigby	Wembley
	Reserve Championship in Barley	Eli Lastiwka	Willingdon
1941	World Championship in Oats	Wm. Skladan	Andrew
	World Championship in Barley	Paul Pawlowski	Vilna
	Reserve Championship in Barley	Tom Mynzak	Willingdon

As will be noted, two of these world championships and one reserve championship were won this year in spite of inclement harvesting weather throughout the Province. These top winnings were again remarkably well supported by many other awards to their fellow junior members at this great show. Out of the top 33 awards in wheat, 13 were won by club members. All of the first nine and 13 out of the top 16 awards in oats were won by Alberta

juniors, as well as six out of the top 10 awards in six-rowed barley and all three of the top placings in two-rowed barley.

The winning of world championships, though perhaps the most spectacular achievement of club work, is nevertheless not the most important. It is merely evidence of things unseen—efficient instruction, home and community co-operation and the beneficence of Alberta's soil and climate, each play an important part. But it takes also high personal qualities to succeed; a worthy and unfaltering ambition, a clear, constant vision of the goal that lies far ahead, painstaking effort, an artist's love of the task in hand, and finally the sort of joy of achievement that considers each success, but a stepping-stone to higher things. But most of all, the real values lie with the rank and file of members, mastering the technique of better farming while yet on the threshold of their career, and setting their limitless energies to work for a more satisfying life on the farm.

SEED SHOWS

Seed shows aid in crop improvement work by creating greater interest in good seed and assisting in its sale and distribution. They also bring to the attention of farmers, new varieties that may have outstanding merit. The display of high quality seed and grain sets a standard for farmers to attain, and consequently leads to improved farming methods.

The Alberta Provincial Seed Fair was held in Edmonton under what was, in many respects, a new set-up. The three district seed fairs formerly held were withdrawn, and the Provincial Corn Show was combined with the Provincial Seed Fair.

In line with recent tendencies for making Alberta seed fairs serve as an agency to promote the sale of superior seed, the policy of requiring cereal exhibits to represent a bulk lot on the farm was extended from the Registered Division to the Commercial Division this year.

A new feature of the show was an inter-club section, in which the three winning samples from each local junior grain club seed fair represented the club as a group exhibit. This display of over 300 samples proved of unusual interest to the public.

Perhaps the most attractive display of the show was that of the winning Alberta grain and seed exhibits from the 1940 International Grain and Hay Show, Chicago. The display included world championships in wheat, oats and beans and reserve championships in barley, field peas and beans, besides some 60 other important winnings.

This year the Alberta Department of Agriculture has again assisted seed growers to show at the International Grain and Hay Show, Chicago, by assembling exhibits and paying shipping costs. Prize money was duplicated for winning exhibits, and a special award of \$25.00 was paid in the case of first prizes, which amount was increased to \$50.00 for championships in wheat, oats and barley. Alberta farmers maintained their good record of winnings at the 1941 show. For the first time in the history of the show, Alberta won championships in all three of our leading cereals—wheat, oats and barley. The successful winners were Wm. Miller of Edmonton, Wm. Skladan of Andrew, and Paul Francis Pawlowski of Vilna, respectively. Two reserve championships also came to this Province in barley and field peas, winners being Tom Mynzak of

Willingdon and James A. Herlihy of Edmonton, respectively. In addition to these, Alberta growers took 16 of the top 33 awards in wheat, all of the first 9 and 14 of the top 17 awards in oats, 7 of the first 10 awards in six-rowed barley, all 4 top placings in two-rowed barley, as well as many important winnings in peas, beans, flax, alsike, red clover and crested wheat grass seed. Nine first awards were included in these winnings with a total of 59 grain and seed winnings all told.

The winning of so many prizes at the International Grain and Hay Show is important at this time when we are endeavouring to expand our export market. The attention of seed importers and buyers will be focussed on Alberta, where seed of such high quality and good appearance has won high recognition.

ALBERTA SEED GROWERS' ASSOCIATION, LTD.

The following officers were appointed to the Alberta Seed Growers' Association, Ltd., for 1941: H. P. Wright, Airdrie, President; T. H. Howes, Millet, Vice-President; A. T. Sinclair, Edmonton, Secretary-Treasurer; Directors: O. S. Longman, Edmonton; J. E. Appleby, Holden; H. E. Bronson, Cherhill; P. U. Clubine, Grande Prairie; L. Hendrigan, Winfield; A. Morton, Lethbridge; C. C. Patching, Lethbridge; A. M. Smith, Wembley; D. Thomas, Mayerthorpe.

PRODUCTION AND SALE OF REGISTERED AND CERTIFIED SEED

The production of registered and certified seed plays an important part in the welfare of our agricultural industry. Effective improvement in the quality of our crops can be obtained only through the use of high quality seed. It is imperative that we give constant attention to the improvement of our crops in order to maintain the high standard for our commercial grain for export trade.

Due to excellent soil and climatic conditions the quality of seed produced in this Province is equal to or better than seed produced elsewhere. This has led to an expansion of the export markets, particularly in the United States and Eastern Canada. It can safely be said that seed production is becoming an important branch of our agricultural industry. This year the Field Crops Branch in co-operation with the Alberta Seed Growers' Association, Ltd., has made a survey of the possible markets and the kinds and varieties of seed in demand. Growers can be encouraged to produce seed of the kind and quality suitable for the export market.

The sales of seed wheat were considerably below that of last year, due, no doubt, to the wheat reduction plan creating a lack of interest in this crop. The figures given below for seed distribution do not include the sales made direct from bin to farmers, which is undoubtedly of significant volume.

The following are the amounts of seed marketed through the Alberta Crop Improvement Association and the Alberta Seed Growers' Association, Ltd., with 1940 figures given for comparison:

	1941	1940
Wheat	16,000	68,900
Oats	99,000	60,825
Barley	4,500	4,100

FOUNDATION STOCK SEED POTATOES

This year the Field Crops Branch is continuing the promotion of foundation stock seed potatoes.

Potato diseases continue to be a serious problem, and the Dominion Government has found it necessary to enforce stricter regulations covering the production of certified seed. Certified seed growers are now required to plant by tuber units at least one-tenth of each field entered for certification, unless foundation seed or seed recommended by district inspectors is planted. As planting by tuber units entails considerable extra labour, there is likely to be a greater demand for foundation stock seed.

Foundation stock seed is now being produced in this Province by experienced growers under supervision of the Dominion Seed Potato Certification Service and the Field Crops Branch. Such stocks are derived from the highest quality seed available; tested for freedom from disease; carefully selected for vigour, suitability of type and high yield. This seed is sold to certified seed potato growers, and forms an excellent source of high quality seed stocks.

Last year several experienced growers undertook production of foundation stock seed potatoes, and some of them succeeded in producing stock which met the high standards set for such seed. This permitted the distribution of approximately 40 bushels to the certified seed growers. The use of this seed should do much to raise the standard of quality of our certified seed potatoes.

It has been found necessary to eye index the tubers in the production of foundation stock seed. The Field Crops Branch has considered it advisable to provide this service to the foundation stock seed growers, and this year approximately 2,500 tubers will be tested in the greenhouse during the winter months. Eyes from these tubers will be grown in order to determine their freedom from disease. The approved tubers are returned to the growers to be multiplied. The Field Crops Branch is paying a bonus to the growers as a means of compensating them for the extra cost and labour incurred in the production of foundation stock seed potatoes.

The Alberta Certified Seed Potato Growers.

Any growers of certified seed potatoes may become a member of this Association.

Since the improvement of the potato crops in this Province depends largely on the use of good seed, this Association plays an important part in the potato industry. They are working closely with the Field Crops Branch in promoting the use of certified seed in order to help control potato diseases and improve the quality of the crop.

The annual meeting that is usually held in the summer will this year be held at the time of the Provincial Seed Fair.

Mr. L. Silver, the former president, has retired from farming, and his position as President has been taken over by Mr. W. L. Ingraham of Lacombe. The following are the officers of the Association: W. L. Ingraham, Lacombe, President; A. T. Sinclair, Edmonton, Secretary; Directors: F. T. Rickett, R.R. No. 4, South Edmonton; F. Ash, R.R. No. 4, South Edmonton; T. H. Howes, Millet; T. Molineaux, Edmonton.

Southern Alberta Potato Growers' Association.

This Association is continuing to serve the interests of the growers in Southern Alberta. Last year they undertook the dis-

tribution of certified seed to the growers of the Lethbridge District with the purpose of combatting the potato diseases which had become prevalent there. They are giving valuable assistance in marketing problems.

The officials of this Association are: A. Morton, President, Lethbridge; Chas. Walkof, Secretary, Lethbridge; John Pahara, Vice-President; Directors: J. T. Hadlington, Jas. Snell, F. R. Bates, K. Sugimoto, and Mr. Raskovich.

PRODUCTION AND SALE OF FORAGE CROP SEED

The acreage seeded to forage crops in Alberta is steadily increasing, and this is creating an ever-expanding domestic market for our seed. Poor crops in Eastern Canada and the United States, combined with the importing of forage crop seed by Britain, has provided an excellent export demand for nearly all kinds of seed at good prices.

The increase in production of legumes continues on the grey wooded soils, where they are especially beneficial as soil builders. Legume seed production in this area is now becoming an important cash crop, which is an advantage because of the reduced wheat acreage and a tendency to discourage wheat growing in this area because of its low quality.

The expansion of grass seed production is mainly in the drier areas of the south-east section of the Province. This is of benefit as a means of soil conservation and weed control.

In spite of the increased acreage of forage crops grown for seed this year, there is little increase in total volume over last year. This was due mainly to the unfavourable weather conditions which not only lowered the yields but impaired the quality, especially for alfalfa and clovers.

The following figures give the estimated production of the more important crops, with 1940 figures given for comparison:

Kinds	1940	1941
Alfalfa	600,000 lbs.	570,000 lbs.
Sweet Clover	300,000 "	320,000 "
Red Clover	150,000 "	200,000 "
Alsike	200,000 "	180,000 "
Timothy	1,000,000 "	250,000 "
Crested Wheat Grass	300,000 "	400,000 "
Brome Grass	2,000,000 "	3,025,000 "
Totals	4,550,000 lbs.	5,945,000 lbs.

The following are comparative figures on the acreages inspected of registered and certified forage crop seeds:

Kinds	Acreage Inspected, 1941	Acreage Inspected, 1942
Brome Grass	8,532	6,370
Crested Wheat Grass	692	443
Creeping Red Fescue	254	214
Sweet Clover	62	117
Alsike	65	26
Alfalfa	1,400	760

PORTABLE SEED CLEANERS

This policy was originally a joint Dominion-Provincial Policy in establishing portable cleaners. With the commencement of the war, the Dominion Government withdrew its assistance. The Province is continuing this policy, with the organizations being called upon to pay 50% of the cost of the equipment, rather than one-third as

was the case under the joint Dominion-Provincial Policy. At present cleaners are located at the following points: Innisfail, Gage, Berwyn, Fairview, St. Paul, Lacombe, Camrose, Grande Prairie, Warburg, South Edmonton, Barrhead, Sangudo.

For the season 1940-41, quantities of grain and clover seed cleaned by the above cleaners consisted of approximately:

Kind	Quantity Bus.	Kind	Quantity Lbs.
Wheat	121,183	Brome	8,485
Oats	97,947	Crested Wheat Grass	28,100
Barley	18,659	Alfalfa	164,617
Rye	4,027	Sweet Clover	38,070
Flax	7,140	Timothy	149,930

REPORT OF THE ACTING LIVE STOCK COMMISSIONER AND SUPERVISOR OF FEEDER ASSOCIATIONS

(A. A. CAMPBELL)

The live stock industry in Alberta has been marked during 1941 by renewed interest in cattle and sheep raising, and another heavy increase in swine production. Higher market prices paid for commercial live stock has stimulated a strong demand for pure-bred stock, with the result that towards the end of 1941 breeders received higher prices for breeding stock than had been obtained during the past five years.

This fresh impetus in live stock production has added to and greatly increased the duties of the Live Stock Branch. Further, enlistments in the permanent forces, with resignations and inter-departmental changes, has added to the responsibilities of the remaining personnel.

Climatic conditions and feed supplies have not been favourable in many areas throughout the Province. Prolonged rainfall in Peace River district retarded all harvesting operations, and delayed to a certain extent the marketing of live stock, and had a serious effect upon the purchase of pure-bred foundation stock. In the central and eastern portions of the Province producers are faced with a shortage of coarse grains for live stock feeding. This shortage may curtail the live stock programme in 1942, particularly in connection with swine production.

Fewer lambs and cattle are being fed in feed lots by commercial feeders and feeder associations. A general increase in live stock production is anticipated in the ensuing year.

Interest in Live Stock Improvement policies continued to increase throughout the year.

A brief resumé of the policies and other activities of the Live Stock Branch will be dealt with under their respective headings.

CATTLE

The cattle industry in Alberta had one of the most active and prosperous years since the war of 1914-18. Steady markets for all classes of cattle has encouraged the industry greatly. This condition can largely be attributed to the increased consumption of beef due to better economic conditions and to the outlet that was provided for surplus beef on the United States market.

Dominion Department of Agriculture figures show cattle marketings in Alberta for the past eight years as follows:

1934	183,519	1938	264,505
1935	257,782	1939	248,748
1936	363,811	1940	257,823
1937	311,506	1941	292,083

Cattle marketings throughout the year 1941 to stockyards, direct to packings plants, and on export were higher than for the previous year. Calf marketings were lighter, which might indicate that higher price levels are tending to hold some calves off the market.

The destination and number of cattle shipped out of the Province during 1941 was as follows:

British Columbia	62,797	Quebec	11,341
Saskatchewan	5,807	U.S.A.	76,534
Manitoba	19,042		
Ontario	10,671	Total	186,192

Feeders enjoyed a good margin on most grades of fed cattle. There was some slump on heavier steers in April and May, but this was more than made up following that period, and held at a good level through the remainder of the year.

A poor crop of feed grain and roughage in some parts of the Province has no doubt had some effect on the number of cattle being fed. Feeder prices were comparatively high, with some slackening off in late November and early December.

The following table shows the trend of cattle exports from Alberta to the United States for the past six years:

1936	81,785	1939	61,884
1937	72,205	1940	48,889
1938	38,185	1941	76,534

Breeders of pure-bred beef cattle had a satisfactory year. A very active demand was evident, not only for pure-bred sires, but for female breeding stock as well. United States buyers were active at the bull sales in the spring of 1941, and came back in the late summer and fall for bull calves, heifers and cows. Pure-bred cattle exported from Alberta during 1941 totals as follows, as given by the Canadian National Live Stock Records Office:

Shorthorns	485
Aberdeen Angus	269
Herefords	490
Total	1,244

The bulk of these cattle went to California and Texas, with some going to New York State and Maryland. A number of Herefords went to Montana and the adjacent range states.

This demand for Alberta breeding stock has stimulated competition that was largely responsible for a general increase in prices. There were 270 pure-bred bulls of the breif breeds purchased in 1941 for the Bull Exchange and Assistance Policy of 1941-42, and a considerable number of applications had to be refused because bulls could not be purchased at the price that applicants felt able to pay.

During the season of 1940-41, 217 pure-bred bulls were placed under the Bull Exchange Policy. Some details of the Bull Exchange Policy were changed for the 1941-42 season, but the underlying principles remain the same. Those are, that it is the intention of the Department to supply farmers with suitable sires at a reasonable cost, and with each such sire supplied to eliminate a grade or scrub sire from the herd in question.

The number of bulls supplied in 1940-41 was somewhat lower than in previous years, but indications are for the 1941-42 season to be back to a figure comparable to former years.

Large numbers of entries and high prices were both in evidence at the bull sales in the spring of 1941. Average prices were higher at all sales than for some years.

CALGARY BULL SALE

Breed	1939		1940		1941	
	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
Shorthorn	146	\$169.90	155	\$158.52	253	\$172.82
Angus	49	166.73	64	173.44	107	195.70
Hereford	247	230.00	404	205.22	310	303.77

EDMONTON BULL SALE						
Shorthorn	56	\$131.07	61	\$119.59	54	\$161.50
Angus	24	86.25	6	128.33	6	144.17
Hereford	13	143.84	14	127.50	6	258.33
LACOMBE BULL SALE						
Shorthorn	20	\$142.25			50	\$109.90
Angus	14	123.57			23	136.30
Hereford	29	138.80			40	193.75

Due to the demand and higher prevailing prices for dairy products, much competition developed in the purchasing of dairy cattle at enhanced values.

As a means of improvement in dairy herds, assistance is now rendered to members of dairy calf clubs organized by the Department, by assembling dairy heifer calves obtained from dairymen in the Edmonton milk shed. A number of the dairymen are co-operating in this effort, and numerous calves have been purchased to fill requirements.

SWINE

Hog production in Alberta has established another record in marketings, with the largest volume of hogs ever produced in the Province. Heavy marketings combined with higher prices have assisted the swine industry to contribute a larger share of the Provincial agricultural income than ever before in the history of the industry. During the past four years the number of hogs marketed have more than doubled, as indicated by figures in the following table:

Year	No. of hogs Marketed	Increase over Previous Year	Estimated Total Value
1938	782,857		\$14,000,000.00
1939	979,898	25.16%	16,500,000.00
1940	1,485,382	51.58%	24,000,000.00
1941	1,950,659	31.32%	38,600,000.00

Alberta has held the position of second largest hog producing Province in the Dominion for the past decade, and may within the next year become the leading swine producing Province. During the latter part of 1941 our weekly marketings exceeded those of Ontario.

With steadier and higher prices under the "Bacon Agreement," an unlimited market has been opened for Alberta's swine industry, and if proper attention is given to improvement of quality and more uniform marketing throughout the year, this Province is destined to play an important role in the swine picture of the ensuing year.

It is quite apparent that many farmers, not usually hog producers, have taken advantage of the opportunity to market their surplus grain through hogs. In comparison with 1940, the 1941 marketing year furnished some rather striking contrasts. In the first place, while prices were being reduced in 1940, those in 1941 were continually on the up grade. The average price for B1 carcasses (basic grade) during the last week of December, 1941, was \$13.50 per 100 pounds, as compared to \$9.80 per 100 pounds at the end of 1940. Secondly, the export and domestic markets in the past year continually were in the position of demanding more hogs. As a result, the "eat more pork" campaign conducted in 1940 had to be replaced by the "eat less pork" campaign in 1941. This was accomplished by restricting the number of hogs going into domestic channels each week, and restricting the export of live hogs to other countries. Thirdly, the rapid rise in United States hog markets in 1941 eventually led to a restriction of exports to that market as compared to controlling of imports early in 1940 from the same market.

In order to meet the requirements under the 625,000,000 pound agreement with the British Ministry of Food, which will be completed on October 13th, 1942, it will be necessary to step hog production up to a higher level. It is estimated that the prairie provinces will require a further increase of 1,500,000 hogs over 1941 production to assist in meeting the requirements under the new agreement. Since Alberta is the largest hog producer of the three prairie provinces, a large increase in production will be essential.

A keen demand occurred throughout the Province for pure-bred stock. Reasonable prices were obtained by pure-bred breeders at fall auction sales held in Edmonton, Red Deer and Calgary. A total of 394 pure-bred swine were sold at these sales at an average price of \$36.90 per head. At the Red Deer Sale, 41 pure-bred swine brought an average price of \$26.21. A tabulated summary of sales at Edmonton and Calgary for 1939, 1940 and 1941 is set forth below:

EDMONTON SWINE SALE

Breed	1939		1940		1941	
	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
Yorkshire sows	43	\$ 28.18	53	\$ 24.86	52	\$ 27.50
Tamworth sows	2	25.00	5	22.30		
Yorkshire boars	79	31.43	85	23.95	44	38.12
Tamworth boars	3	17.70	10	17.10	1	35.00
Yorkshire bred sows	2	47.50	5	28.00		
Totals	129	\$ 30.18	158	\$ 23.89	97	\$ 32.47

CALGARY SWINE SALE

Tamworth sows	7	\$ 33.33	9	\$ 21.83	11	\$ 30.68
Yorkshire sows	56	37.69	87	24.94	98	39.88
Berkshire sows	3	29.17				
Tamworth boars	16	55.00	25	29.84	22	31.59
Yorkshire boars	106	49.41	109	21.67	123	43.31
Berkshire boars	8	44.06	2	12.50	2	22.50
Totals	196	\$ 45.41	232	\$ 23.70	256	\$ 40.28

DOMINION-PROVINCIAL SOW DISTRIBUTION POLICY

Work under this Policy was continued throughout 1941 with the Dominion and Provincial Departments of Agriculture co-operating in selection of breeding stock and in payment of transportation charges. There were 48 Swine Improvement Association organized, and members purchased a total of 1,112 gilts. The Dominion Department of Agriculture provided a pure-bred boar for each association organized.

SHEEP

Alberta maintained its lead over all provinces in wool production and sheep population. The 1941 June survey indicated a further increase of 14,400 head over the 1940 survey, and showed a sheep population of 897,000 head in the Province. With the higher prices which prevailed throughout the year for both wool and lambs, sheepmen received more revenue from their flocks than had been realized during the past few years.

Higher prices for commercial lambs and wool helped to stimulate pure-bred sales. Numerous inquiries were received by the Department regarding the availability of female stock, particularly among beginners in the sheep industry. The numerous sales of ewes reported by flock owners and the excellent prices obtained for pure-bred stock would indicate that Alberta's sheep industry will continue to expand.

Five pure-bred sales were held in the Province, at Edmonton, Lacombe, Red Deer, Calgary and Lethbridge. At these sales a total of 758 pure-bred sheep sold at an average price of \$26.91 per head. Below is a summary of the 1939, 1940 and 1941 sales held in the Province:

THE PURE-BRED SALES						
Breed	1939		1940		1941	
	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
EDMONTON:						
Suffolk ewes	6	\$ 20.21	10	\$ 11.60	34	\$ 14.70
Oxford ewes	10	7.65	5	7.60	3	14.00
Shropshire ewes	7	9.36	8	9.06		
Southdown ewes	7	8.07	2	10.00	12	10.41
Hampshire ewes			1	12.50	12	14.41
Totals	30	\$ 10.65	26	\$ 9.96	61	\$ 13.77
Suffolk rams	65	\$ 20.84	32	\$ 24.63	78	\$ 24.17
Oxford rams	21	19.07	39	17.67	38	14.89
Shropshire rams	12	21.50	15	15.37	15	20.17
Southdown rams	12	24.42	6	15.82	12	20.00
Hampshire rams	28	22.68	36	19.29	46	28.50
Totals	138	\$ 21.31	128	\$ 19.51	189	\$ 22.78
CALGARY:						
Suffolk ewes	33	\$ 16.73	55	\$ 15.46	19	\$ 31.05
Shropshire ewes	17	12.53	4	13.50	4	16.25
Southdown ewes	10	19.45	11	16.45	30	20.33
Hampshire ewes	53	17.97	86	15.53	37	24.00
Totals	113	\$ 16.92	146	\$ 16.58	90	\$ 23.92
Grade ewes	104	\$ 6.87	30	\$ 6.72	105	\$ 11.03
Suffolk rams	128	\$ 21.49	89	\$ 29.01	79	\$ 42.12
Shropshire rams	9	13.56	8	19.81	4	48.75
Southdown rams	17	19.03	22	19.73	31	33.87
Hampshire rams	118	22.95	138	21.12	123	39.92
Rambouillet rams	9	26.33	4	15.00		
Corriedale rams	2	35.50				
Totals	283	\$ 21.95	261	\$ 23.56	237	\$ 40.01
1941 SALES						
	LACOMBE		RED DEER		LETHBRIDGE	
Suffolk rams			14	\$ 20.96		
Shropshire rams			1	15.00		
Hampshire rams			15	16.74		
Oxford rams			2	7.50		
Rambouillet rams					55	18.54
N.Z. Corriedales					5	29.80
Can. Corriedales					33	27.58
Totals	18	\$ 29.67	32	\$ 17.95	93	\$ 22.35
Grade ewes	338	\$ 6.00	78	6.72		
Pure-bred ewes	38	11.42				

SHEEP AND SWINE IMPROVEMENT POLICIES

These policies are designed to assist commercial sheep and swine producers in purchasing approved type sires. Under these policies farmers submit an application accompanied by payment in full. Approval of the application rests with the Live Stock Branch. This branch administers the policies and is responsible for the purchasing and distribution of the pure-bred sires. The Department of Agriculture pays the transportation charges on the pure-bred sires to the nearest railway shipping point of the applicant. The number of pure-bred sires which have been distributed under the policies are as follows:

Year	Swine Improvement	Sheep Improvement
1939	287 boars	
1940	153 boars	52 rams
1941	224	69 rams

THE CHICAGO INTERNATIONAL LIVE STOCK EXPOSITION

The high quality of Alberta bred and fed beef cattle was again clearly exemplified by the awards received on steers exhibited by the University of Alberta as follows:

FAT SHORTHORNS—Class 108, 2nd prize, 4th prize; Class 109, 8th prize; Class 111 2nd prize.

FAT HEREFORDS—Class 114, 1st prize; Class 115, 1st prize, 7th prize; Class 117, 2nd prize.

FAT ANGUS—Class 120, 8th prize; Class 121, 6th prize; Class 124, three steers any breed, pure-bred, grade or cross, 2nd prize.

In the breeding classes, Mr. Claude Gallinger of Edmonton, the internationally known Shorthorn breeder, won 8th prize on a Shorthorn bull exhibited in Class 4.

In recognition of the achievements of these exhibitors the Department has again decided to duplicate prize moneys.

LIVE STOCK FEEDER ASSOCIATIONS

A profitable feeding season was experienced by a majority of the members of the 12 feeder associations in operation during the feeding season of 1940-41.

The cattle feeders obtained a satisfactory spread, whilst the lamb feeders operated on a very narrow margin. However, greater financial returns were received for grain and forage crops marketed through live stock than were obtainable by the sale of similar feeds through the regular marketing channels.

The demand became so insistent for additional associations that it was deemed advisable to organize three new associations. These new associations are centered in the Carstairs, Brooks and Glenwood districts.

A very gratifying and normal growth has occurred in feeder association activities during the past four years.

The following table concisely depicts the volume of operations of Alberta Feeder Associations during the 1940-41 feeding season:

VOLUME OF OPERATIONS OF ALBERTA FEEDER ASSOCIATIONS DURING THE FEEDING SEASON OF 1940-1941

Association and Address	Cost of Animals	Cattle	Sheep	Total Membership	No. Members Feeding
Bow Valley Livestock Feeders' Ass'n	\$106,171.79	577	14,906	163	82
Central Alta. Livestock Feeders' Ass'n	105,442.05	2,126	1,870	101	49
Edmonton & District Livestock Feeders' Ass'n	82,856.39	2,090		88	50
Innisfail Feeders' Ass'n, Ltd.	83,076.33	2,039		73	53
Lethbridge Feeders' Ass'n, Ltd.	69,674.07	1,066	3,973	48	18
Olds Livestock Feeders' Ass'n, Ltd.	116,388.49	2,773	111	59	34
Raymond-Magrath Feeders' Ass'n, Ltd.	106,122.05	1,348	6,065	75	37
Red Label Feeders' Ass'n, Ltd.	85,863.03	1,116	5,904	33	22
Taber Feeders' Ass'n, Ltd.	72,565.76	1,263	1,431	66	29
Vauxhall-Albion Ridge Feeders' Ass'n	47,846.82	675	2,042	51	16
Vermilion & District Feeders' Ass'n	56,404.49	1,402	1,561	108	41
Wainwright-Edgerton-Chauvin Feeders' Ass'n, Ltd.	24,078.23	581		103	20
	<u>\$954,489.50</u>	<u>17,056</u>	<u>37,863</u>	<u>968</u>	<u>451</u>

THE STOCK INSPECTION ACT

A number of amendments were made to The Stock Inspection Act during the last Parliamentary Session, in order to clarify and facilitate the operating of this Act.

Due to the increased number of community auction sales of live stock, it was necessary to employ additional staff for inspection duties. These inspectors also covered wide areas in the Province, checking on any infringements of this Act.

Losses of live stock, from various causes, were considered very light

Excellent support and valuable assistance was rendered by members of the Royal Canadian Mounted Police Force.

BRAND RECORDS

Higher prevailing values for live stock has greatly increased the attention being paid by live stock producers in obtaining or re-newing brands.

During the year there were 1,638 new brands recorded to their respective owners, consisting of 1,197 cattle, 432 horse, 4 sheep, 3 fox and 2 poultry brands; 151 transfers were registered; strays, searches and certified extracts numbered 293, renewals 3,095 (cattle 1,922, horse 1,149, fox 23, poultry 1), making a combined total of 5,177 transactions.

Compared with 1940, these figures show an increase of 425 cattle brands, 76 horse brands, 3 fox brands, 259 renewals, 23 transfers, and a decrease of 3 poultry brands.

The approximate numbers of brands now in good standing in our registers are as follows:

Cattle Brands	13,227
Horse Brands	7,501
Poultry Brands	14
Sheep Brands	11
Fox Brands	48
Total	<u>20,801</u>

Material has been compiled for a supplement to the 1937 Brand Book.

THE DOMESTIC ANIMALS (UNORGANIZED TERRITORY) ACT

Much work is entailed in the administration of this Act, relating to the establishment and maintenance of pound district and the disposal of estray animals.

Numerous requests for the establishment of new pound districts and the revision of boundaries of existing districts have required consideration.

RESTRICTED AREA PLAN

Work continues under this plan, the object being the eradication of tuberculosis in definite areas.

The first general test has now been completed in the following municipal districts: M.D. No. 517, Clover Bar is now a restricted area; and the following seven municipalities are accredited areas: M.D. No. 518, Strathcona; M.D. No. 457, Lloyd George; M. D. No. 427, Evergreen; M.D. No. 337, Vimy; M.D. No. 307, Starland; M.D. No. 306, Lambton; and M.D. No. 367, Waverley. Testing is now under way in M.D. No. 397, Lakeside.

THE HORNED CATTLE PURCHASES ACT

The object of this Act is to encourage the dehorning of cattle by breeders, as horned cattle frequently cause considerable damage by bruising while in transit to market. Much consideration is now

being given to devising means of preventing the bruising of live stock in transit, by railroad officials, meat packers, live stock commission men and Government officials.

The moneys received under this Act are placed in a trust fund to be used for the improvement of live stock in the Province and for any other type of live stock work found necessary, whereby the farmer receives a direct benefit, as well as expenditures in the administration of such live stock improvement work.

REPORT OF THE PROVINCIAL VETERINARIAN

(P. R. TALBOT)

The Provincial Veterinarian's Branch continues to give every possible assistance in controlling the various diseases of farm animals throughout the Province. Our efforts are directed especially where there is no qualified Veterinarian, and in addition we co-operate with the Veterinary Practitioner when outbreaks of diseases do occur and when our services are requested.

The supervision of the health of the live stock at our Government institutions comes under this Branch. We also give aid to communities, districts and municipalities in preventing and controlling animal diseases. We have consistently stressed the importance of the prevention of diseases amongst our live stock, for the loss of animals is not only important and of grave concern to the owner, but has a direct bearing on the food supply of the nation. Only through the special vigilance of this Branch can we make a contribution to our live stock men who are endeavouring in every possible way to increase the number of all classes of live stock.

As stated in previous reports, the services of qualified Veterinarians continues to be a serious problem in this Province. This is especially true in districts where there is no railway transportation.

Our work also necessitates close co-operation with our Provincial Health Department, as there are several diseases which may be communicable from animal to man, and when these are discovered they have to be handled quickly and efficiently, as it is most desirable that they do not obtain a foothold in the communities where they originate.

We wish to express our appreciation for the assistance rendered to us by the qualified Veterinarians throughout the Province, many of whom have been instrumental in preventing outbreaks of disease in their respective localities. I refer particularly to swine diseases, and also the worth-while efforts made in controlling outbreaks of Equine Encephalomyelitis, as the responsibility of the control of this disease rests largely upon their shoulders, and through their co-operation many outbreaks have been prevented.

HORSES

During the past year a considerable number of cases of Swamp Fever, Influenza, and Navel Disease in colts were reported, especially in the northern areas, where the first mentioned disease was most prevalent. I mention this disease particularly because it occurs in newly settled areas where farmers are making an effort to establish themselves, and it is of very great economic importance to them. This is likely to continue to be a serious problem as long as new areas are being opened up. We are not able to recommend any satisfactory treatment at the present time; the only suggestions we can offer are those of preventive measures.

In connection with Equine Encephalomyelitis, our losses during the past year were not as extensive as in some previous years; nevertheless, from reports given by the various municipalities the mortality amounted to over 1,000. I might mention that vaccination was not carried out last spring to the extent that it should

have been; the farmers usually do not wish to go to the expense of vaccinating horses until the disease appears. It was, therefore, unfortunate that outbreaks occurred and losses resulted before the trouble could be satisfactorily controlled. There is no question that this disease is one of the most serious affecting our horse population. Outbreaks during the past four years have definitely shown this. Since the farmers were given every help in 1938, and educated both as to prevention and control, the direct responsibility for controlling it has now been placed on the horse owner, and from an economic standpoint it is hoped that the horses of the Province will be vaccinated yearly until the disease has been completely put to rout.

A revision of the history of the disease in our Province reveals that no effective means of control was available until Equine Encephalomyelitis (Chick) vaccine was used. The manner in which this vaccine reduced the incident of the disease has shown that sleeping sickness in horses can be prevented by vaccination. It has also been shown that the best results can be obtained when the horses are vaccinated early in the spring. It is impossible for us to say whether or not this disease will make its appearance in 1942, but we recommend widespread vaccination, as even in the event of horses which were vaccinated last year, it is doubtful if there is any immunity after a period of eight months. On account of the wide area covered by this disease last year, it may reappear to destroy a large number of horses this coming summer. With our present knowledge, protection means regular vaccination each year. It is also important that two doses of vaccine be given in from seven to fourteen day intervals. This should be done at least four to six weeks prior to the usual appearance of the disease. It should also be remembered that full protection following vaccination should not be anticipated earlier than seven days following the first dose—a single dose establishes only temporary immunity, and two doses, as before mentioned, are essential. The vaccine can be given to both adult and young animals; mares in foal may also be safely treated. It is not necessary that treated animals be withheld from work. In some cases highly sensitive animals show a more definite reaction, this being indicated by an extensive swelling at the point of inoculation. The incidence of such swellings is rare, however, and rapid recovery usually takes place. Young colts tolerate the vaccine equally as well as adults.

CATTLE

Hemorrhagic Septicemia (so-called Shipping Fever in cattle).—This has been a serious problem to the cattle industry. It has been fairly common in Alberta for many years, but a considerable number of outbreaks, with a varying rate of mortality, has occurred—especially during the past two years. Cattle of all ages may be affected, but it is most frequently seen in young animals when sent to feed lots. There is an erroneous idea that the disease originates in stock yards only, but many outbreaks occur in animals that have not passed through this channel. Most of our cases appear in animals that have been transported by truck, possibly kept on the road for hours under adverse weather conditions and arriving at their destination in an exhausted condition. It is not necessary to mention the symptoms except to say that there are several different forms of the disease—the one most prevalent in this Province being the pneumonia form. It is frequently fatal, and death may occur at

any time from a few hours to six or eight days. I mention the fact that the pneumonia form has been the most common, but on different occasions over a period of years outbreaks have occurred where only the digestive tract has been affected. In my opinion, the disease can be satisfactorily controlled by preventive measures. If it were possible to have the animals immunized against Hemorrhagic Septicemia for at least ten days prior to shipping, the trouble could be largely eliminated. We realize that it is almost impossible to put this into practice, but live stock men could avail themselves of the use of a bacterin as a preventive measure to a greater extent than they do. It would be advisable, if possible, to vaccinate before shipping. It would also be a wise procedure to vaccinate other cattle already on the farm to prevent the spread of infection should the disease be brought on to the premises.

BLACKLEG

This disease is the most virulent, rapid and fatal malady of young cattle. There are certain districts in Alberta where it is particularly prevalent, and in spite of all endeavours it continues to make its appearance. For a number of years live stock men depended entirely upon preventing the disease by the use of the pill form of vaccine. This has not given as satisfactory results as newer forms of vaccines which have now been placed on the market. The fact that Blackleg can be prevented by the use of a proper vaccine can no longer be doubted by anyone who has studied the subject. It is a wise precaution to vaccinate calves as soon as they begin to forage—never later than three to six months of age. Experience proves that it is safer to vaccinate early than to wait until cases of Blackleg occur. If vaccination is delayed until an outbreak of the disease occurs, many animals may be lost, as the immunity developed by the vaccine requires from 10 to 21 days. For this reason, should an epidemic occur on a farm every effort should be made to protect the calves against exposure by isolating them, not only away from cattle which have been exposed, but from ground where animals have died or where sick animals have been housed.

KERATITIS

We have had a considerable number of infectious Keratitis cases throughout the Province during the past year. Many of these have developed in cattle placed in feed lots early this fall, but numerous cases also appeared in range cattle throughout the summer. This disease can be successfully combatted by isolating the affected animals, and if the eyes are carefully and properly treated, invariably recovery takes place.

FOOT ROT

Numerous cases of this disease occurred in the Province during the past year, and it is difficult to control, as the owners of affected cattle do not take time and trouble to apply treatment properly. When a large number of cattle become affected in a herd, the treatment of each individual case becomes a serious problem. If an affected animal is treated in the early stages and isolated from other cattle, it will assist greatly in preventing the dissemination of the disease.

WEED POISONING

I wish to again draw attention to the large number of cattle lost each year from weed poisoning, Water Hemlock being the most common, although Larkspur causes considerable losses also. A

Bulletin entitled, "Weeds Poisonous to Live Stock," was published some years ago, which contains a full detail of each poisonous plant, the symptoms following poisoning by each and the treatment therefor. This may be obtained by applying to the Extension Branch, Department of Agriculture, Edmonton.

SHEEP

We have a number of conditions affecting sheep in this Province that occasionally causes considerable losses. These are Blackleg, Hemorrhagic Septicemia, Sore Mouth and Death Camas poisoning. The appearance of the first mentioned disease is infrequent in this class of animal. There is a noticeable increase in Hemorrhagic Septicemia each year, which causes a large number of deaths before being effectively controlled. In fact, it has become so serious that many sheepmen are vaccinating their animals prior to putting them in the feed lot in the fall. In connection with Sore Mouth, this condition is causing some economic loss, as it retards the feeding ability of the animal and causes shrinkage. If the symptoms are detected in the early stages, the animal isolated and the mouth treated with reliable antiseptics, the condition can usually be controlled. However, should this be neglected the disease spreads rapidly from one animal to another until practically all animals in the feed lot are affected. Only a few cases of Death Camas were reported. Full information in connection with this plant is given in the Weed Bulletin referred to above.

I may also point out that a large number of the lambs appearing in our feed lots are infested with internal parasites, and in our opinion it is coming to the time when it might be advisable for sheep men to treat sheep for stomach worm and tapeworm immediately upon arrival at the feed lots.

SWINE

Losses from swine diseases are being reported regularly, and owing to increased swine production the mortality rate has increased in proportion. As stated in previous reports many farmers are neglecting to give proper attention to the care of their brood sows before and after farrowing. It is also our opinion that many losses are the result of insufficient attention being given to proper feeding and diseases associated with the food the animals are getting. This is particularly true in connection with young swine, where coarse feeds are fed, resulting in Enteritis, followed by various infections.

We are also of the opinion that not enough importance is being placed by swine men on the necessity of sanitation, the systematic changing of pasture, hog runs, etc. We also believe that too much confidence is being placed on the use of vaccines without knowing the nature of the trouble, as many of our swine diseases can be traced to improper feeding, parasitic infestation and carelessness in regard to sanitation, as above stated. Vaccination, as everyone knows, has no bearing whatever on these conditions.

We should like to stress again the importance of systematic treatment for parasites in swine, as it is rapidly becoming a menace to the swine industry.

STALLION ENROLMENT BRANCH

Horse raising continues to be an important industry in this Province, and the breeding of animals of good type and conforma-

tion should engage the attention of our farmers to a much greater extent than it does at present. The demand for some years past has not been for more horses, but for a better class of animal. It is the aim of the Department of Agriculture to promote the horse breeding industry by every possible means. For many years this important phase of agriculture has been developed largely along the lines of least resistance. Almost any kind of stallion would be acceptable to the stockman, especially in outlying districts, where they were equally careless as to the kind of mares used for breeding purposes, or the class of horse produced. Very little thought was given in the early days of the Province as to why one horse was worth more than another. If the animal was a good work horse it made little difference what his colour or conformation was; this fact exists in some communities even at the present time. The improvement of horses is, under the best conditions, a slow process; this is mainly because of the indifference as to the quality and breeding of the sire used. We notice that the first efforts in the improvement of horses in a district result in a demand for better sires. This is followed within a few years by a much better class of mares. It should be borne in mind that every pure-bred animal is not suitable for improving the class of horses; unfortunately, some pure-bred sires show lack of quality, are of poor conformation and suffer from various unsoundnesses. These defects appear to be more easily transmitted to their progeny than if a grade sire had been used. For this reason pure-bred sires which have been turned down as being unsound and of poor conformation should not be used for breeding purposes.

There has been a gradual decrease in the number of horses in Alberta, as will be noted by the following figures: 1925 the horse population was 849,939; in 1930, 698,695; in 1940, 657,900; in 1941, 656,300.

We should endeavour to look ahead, for with the possibility of rationing of gas for tractors as well as automobiles, the great depletion of horses in Europe, and the likelihood of a large number of farmers being placed on the land when the war is over, there will, no doubt, be a demand for horses of a certain type.

If we are to continue to improve the class of horse in our Province we will have to depend upon the enforcement of our stallion laws to make available good sires for breeding purposes, so that colts can be obtained at a reasonable price. I am of the opinion that our Stallion Enrolment Act has accomplished a great deal in the improvement of our horses. In general, this Act has sought to do, and has done, some of the following things:

(1) It has prevented a great deal of false representation as to breeding.

(2) It has endeavoured to bar unsound and diseased horses for breeding purposes.

(3) It has eliminated, to a great extent, the use of grade and inferior pure-bred stallions.

The following is a brief summary of the work done during the year in connection with stallion enrolment and stallion inspection:

NUMBER OF STALLIONS ENROLLED IN 1941			
Percherons	419	Standardbred	8
Clydesdales	199	Thoroughbred	22
Belgians	140	American Saddle	2
Shires	9		
Suffolk	9	Total	808

NUMBER OF STALLIONS INSPECTED IN 1941

Percherons	151	Standardbred	3
Clydesdales	70	Thoroughbred and American	
Belgians	41	Saddle	4
Shires	4		
Suffolk	1	Total	274

Number turned down as being unfit for public service, 71.

According to the 1938 Amendment, 85 were inspected, out of which 61 were passed.

There were seven stallions imported and inspected, out of which two were turned down.

Re-inspection was made on six appeals, all of which were turned down.

In connection with infractions of The Stallion Enrolment Act, I may say that we have had fewer convictions this year than previously, which would lead us to believe that stallion owners are becoming familiar with the purposes of the Act. There were 144 names reported to this Branch, out of which there were only 10 convictions, as compared to over 200 names reported last year with 21 convictions.

CO-OPERATIVE PURCHASE PLAN

In 1941 the Co-operative Purchasing Plan was again placed under the Provincial Veterinarian's Branch, and Mr. James Mitchell appointed as Horse Promoter. During the term, March, 1941, up to the present 26 groups have been formed at the following points: St. Paul, Wainwright, Greencourt, Falun, Plamondon, Irma, Barrhead, Darwell, Willingdon, Ardmore, Fort Kent, Clover Bar, Fairview, Westlock, Therien, Kelsey, Whitford, Myrnam, Ponoka, Vilna, Richmond Park, Linaria, Rycroft, Salt Prairie, Auburndale.

The total value of these stallions was, approximately, \$10,000.00, or an average price of \$400.00 each.

At present we have 178 of these groups in Alberta, and a large number more in the making. We think that this plan has done more to stamp out the grade stallion than anything else that has been tried so far. Perhaps the main reason for the Co-operative Plan being so popular is that it is a direct benefit to the mare owners and, after all, they are in the majority. It is also a benefit to the stallion owner or breeder; it creates a market for their stallions in the outlying districts which otherwise would still be using grade stallions, and secondly, it is educating farmers to the use of pure-bred sires.

We held 28 Colt Shows during 1941, for colts sired by co-operative group stallions. These shows proved very satisfactory—in all, 441 colts having been shown, or an average of 16 colts per show. Some indication of the interest taken in these shows is evidenced by the fact that the average attendance per show was 85. One outstanding feature was a class put on for boys and girls for showmanship. In all 244 juniors took part, and we are of the opinion that this type of work is doing a lot to stimulate an interest in horse breeding, especially amongst the young people of the Province. The approximate total attendance at these shows was 2,052.

REPORT OF THE DAIRY COMMISSIONER

(D. H. McCallum)

Dairy production reached an all-time high for the Province of Alberta during 1941. The total milk produced amounted to 1,756,323,000 pounds, of which 69.8% was utilized in the manufacture of dairy products and 30.2% consumed in the fresh fluid form.

The production of creamery butter, factory cheese, and evaporated milk exceeded that of any previous year.

The most satisfactory aspect of the 1941 report is the greatly increased value of dairy products, which indicates clearly that the returns to producers for dairy products is fast becoming a major source of farm income. During the year under review the total value of dairy products increased from \$19,500,000 to over \$27,000,000, representing an increase of 40.2% and the highest value since the year 1920, when abnormally high prices reflected in a greater value. An advance in the prices for all dairy products during 1941, in addition to the record production, was responsible for the largely increased value.

The spring of 1941 was somewhat earlier than usual, and large increases in the milk flow were recorded during that period. The northern and eastern portions of the Province experienced prolonged dry periods during May and early June, which curtailed production to some extent. During July and early August the extreme heat and hot winds seriously affected pastures and reduced production. This condition became so serious in the east central part of the Province that it was feared winter feed supplies would be inadequate and herds would have to be reduced. However, a very heavy rainfall in September and early October improved conditions considerably, and it is expected that these areas will have sufficient fodder unless the spring of 1942 should prove to be late and cold. There is a definite shortage of coarse grains to supplement the feeding of dairy cattle in these areas, which will curtail production during the winter months of 1942.

The production of creamery butter amounted to 35,316,143 pounds, representing an increase of 18.5% over 1940 and an increase of 13% over the previous high figure of 31,242,357 pounds recorded in 1938. The production of factory cheese was 3,140,978 pounds, which also represents an all-time record.

It is worthy of note that the largest increase in milk production was recorded in the northern section of the Province. Using the production of creamery butter as a guide, we find that the percentage increase by sections during 1941 over 1940 was as follows: Northern Section 24.8%, Central Section 11.5%, and the Southern Section 20.1%. The factories from Red Deer north, during the year 1941, manufactured 75% of the total creamery butter output.

It is gratifying to again report an improvement in quality for creamery butter and factory cheese. Considering the high standard attained in recent years for creamery butter, and the fact that a large number of experienced plant men have joined the various branches of His Majesty's Active Service Forces, this improvement in quality is worthy of special note.

The following statements include a summary of the production and values of dairy products for the past two years:

QUANTITIES AND VALUES OF DAIRY PRODUCTS
(1941—Final)

	Pounds	Price	Total Value
Creamery Butter	35,316,143	\$.3055	\$10,789,082
Farm Dairy Butter	14,040,000	.2555	3,587,220
Factory Cheese	3,140,978	.1955	614,061
Farm Dairy Cheese	225,000	.1755	39,488
Ice Cream and Ice Cream Mix (Gals.)	849,488	1.1240	954,847
Milk, Cream and Evaporated, Consumed, Fed to Animals or otherwise utilized			11,392,074
			<u>\$27,376,772</u>

(1940—Final)

Creamery Butter	29,796,520	\$.2231	\$ 6,647,604
Farm Dairy Butter	15,000,000	.1731	2,596,500
Factory Cheese	2,705,853	.1425	385,584
Farm Dairy Cheese	225,000	.1225	27,563
Ice Cream and Ice Cream Mix (Gals.)	664,703	1.0832	720,000
Milk, Cream and Evaporated, Consumed, Fed to Animals or otherwise utilized			9,155,093
			<u>\$19,532,344</u>

DAIRY CATTLE

The estimated figure supplied by the Dominion Bureau of Statistics indicates that Alberta farms had 418,000 milch cows at June 1st, 1941. This represents an increase of .3% over the number reported a year earlier. When consideration is given to the increase in the quantity of milk produced, which was 5.1% over 1940, it is indicated that the average production per cow has increased considerably. It is of vital importance to the dairy industry that a further increase in the production per cow be the ultimate goal of every herd owner.

CREAMERIES

There were 94 creameries in operation during 1941 as compared with 95 during the previous year. All creameries, with the exception of Strathmore which operated in 1940, were in continuous operation during the year. The United Dairies plant in Red Deer was purchased by the Central Alberta Dairy Pool, and the butter equipment was transferred to the Condensery. The Red Deer Creamery erected and put into operation early in September a new, modern plant.

The average output of creamery butter per plant increased from 313,650 pounds in 1940 to 375,704 during 1941. This figure represents the highest average output since the formation of the Province, and with this increase in factory production it should be possible to manufacture at a lower rate per pound and thus return a larger portion of the selling price of the butter to the producer.

CHEESE FACTORIES

The same number of cheese factories (18) operated during 1941 as in 1940. The plant at Breynat did not operate during 1941. However, a new factory at Glenwood commenced operation in July, and present indications are that sufficient volume is assured for operation throughout the whole year.

The production of 3,140,978 pounds of cheese represents the largest output for any one year, and is an increase of 16.1% over the previous high of 2,705,853, established in 1940. Cheese has been in considerable demand following the order of the Dairy Products Board, which prohibited the imports of eastern cheese into Western Canada. During the latter part of the year the price of cheese was

much more attractive than butter, and this reflected in a better return for the producer able to market his product to the cheese factory.

The quality of cheese showed marked improvement during 1941, when 78.6% graded first grade, and 50.05% of this first grade scored 93 points and over. This represents over 1,000,000 pounds of high quality cheese, entitling the manufacturers to either a one or two cent bonus as provided by The Federal Cheese and Cheese Factory Improvement Act of 1939.

NEW DEVELOPMENTS

Operators of creameries and cheese factories, realizing the need for better storage facilities for the manufactured products, have installed refrigeration equipment in a number of factories during the year. This has played a large part in preserving the high quality of butter and cheese which must, through necessity, be stored from the periods of peak production to periods when consumption far exceeds the quantity manufactured.

Another progressive step has been the installation of dryers, which has made it possible to further the utilization of by-products such as skimmilk and buttermilk. At least three additional dryers were installed during 1941, and plans are being made to increase this number early in 1942.

Increased demands from Britain for dried milk products have made it impossible for local industries (such as ice cream, processed cheese, baking and prepared animal feeds) to secure requirements from regular sources, which has necessitated local dairies installing this additional equipment.

CREAM SUPPLY TO CREAMERIES

The following tabulation shows the quantity and quality of cream received at the various creameries during 1941. For the sake of comparison, similar figures have been included for the previous two years.

	AVERAGE TESTS AND GRADES OF CREAM					
	1941		1940		1939	
	Pounds	%	Pounds	%	Pounds	%
Cream Received	87,163,649		73,597,277		73,530,777	
Average Test		(34.6)		(34.4)		(34.4)
Butterfat:						
Table Grade	778,288	(2.6)	765,598	(3.0)	727,445	(2.9)
Special Grade	20,093,810	(66.6)	16,826,895	(66.4)	17,234,846	(68.1)
First Grade	8,369,065	(27.8)	7,097,072	(28.0)	6,625,918	(26.2)
Second Grade	749,951	(2.5)	613,493	(2.4)	667,439	(2.6)
Off Grade	143,639	(.5)	44,513	(.2)	35,425	(.2)
	30,134,753	(100.0)	25,347,571	(100.0)	25,291,073	(100.0)

It will be noted that the quality of cream improved slightly as is shown by the higher percentage in special grade as compared with 1940. Considering the extreme heat during July and August, this would indicate greater care on the part of the producer.

The Dairy Branch has continued its policy of furnishing information to cream producers on the most approved methods of marketing a sweet, clean-flavoured product and receiving the highest possible returns. This was accomplished through the medium of meetings, bulletins and radio addresses. The inspection staff of the Dairy Branch have rigidly enforced the cream grade standards during the year. There were 1,947 visits to factories, where

81,303 shipments of cream were checked for grade, and 26,298 samples of milk and cream check tested for butterfat content.

During the summer and fall seasons there was a greater quantity of cream purchased with a stinkweed flavour than in past years. Increased acreage in summerfallow and more rainfall than usual during September were factors which contributed to this increase. Considering the financial loss to the producer, for this class of cream, it would seem necessary that more educational work be done to eliminate this flavour from both milk and cream marketed in Alberta.

BUTTER QUALITY

The following statement is a summary of the quantity and quality of Alberta butter graded during the past seven years, as reported by the Dominion Department of Agriculture, whose function it is to place the score and grade on creamery butter:

FEDERAL REPORT OF CREAMERY BUTTER GRADED (PASTEURIZED)
(56 pound boxes and samples)

	Total Pounds Graded	First Grade	Second Grade	Third Grade	Below Third Grade
1935	19,081,270	83.0	10.5	6.0	.5
1936	21,584,080	87.4	7.4	4.4	.8
1937	23,553,880	87.0	7.4	4.5	1.1
1938	27,839,952	85.7	7.9	5.4	1.0
1939	27,219,976	86.9	7.0	5.4	.7
1940	27,243,216	88.1	7.1	4.4	.4
1941	32,037,992	88.4	6.9	4.1	.6

There is a slight improvement in quality as shown by the increased percentage of first grade. The figure of 32,037,992 pounds graded is the largest quantity ever scored in a single year, and 88.4% of first grade is the highest per cent. of this quality to be recorded since the grading became a function of the Federal Government in 1927. The Dairy Branch inspectors and instructors have worked in close co-operation with the Dairy Laboratory to maintain the high standard of quality achieved in recent years.

The butter exhibits at the leading Canadian exhibitions again indicated that the quality of Alberta butter is at the top. Entries from this Province were successful in winning 46.2% of all awards, representing the highest standing for any Province. Alberta creameries won all prizes in the Inter-Provincial Exhibitors' Contest. This competition calls for the greatest number of awards in the butter classes at the leading Canadian Exhibitions, which included Brandon, Calgary, Edmonton, Toronto and Vancouver. Due to war conditions, a number of exhibitions formerly included in this contest were not held.

DAIRY BRANCH LABORATORY

The Dairy Branch Laboratory, under the direction of Dr. J. B. Linneboe, again completed analyses on a large number of samples of dairy products. The total number of analyses was 3,752, as compared with the former high of 3,756 during 1940. Creamery butter samples analyzed for mould and yeast content accounted for the major portion of the work, as 3,161 analyses were made from butter manufactured in 85 Alberta creameries.

There was a slight decrease in the average mould, as well as the average yeast count. However, this decrease was not marked, and with proper care in the sterilization of plant equipment, it should be possible to reduce the average counts to a much lower figure than has been recorded to date.

The following table indicates the number of samples analyzed, and the tendency towards lower average moulds and yeast since the commencement of this work in 1925:

Year	Number of Analyses	Av. Number of Moulds	Av. Number of Yeasts
1925	686	28	8,327
1930	2,799	25	619
1932	2,529	13	569
1934	2,128	6	207
1936	2,496	3.3	275
1937	2,529	3.0	170.2
1938	2,610	3.2	110.7
1939	2,634	2.2	74.6
1940	3,013	2.3	99.9
1941	3,161	1.9	92.2

The service of distributing a pure active starter to all cheese factories, twice a month, was continued. The work of propagating and incubating these starters requires daily attention, and the Dairy Bacteriologist must return to his task on Sundays and holidays, similarly to the producer.

It was found that at certain factories the cultures received from the Dairy Laboratory became inactive after a series of propagations. This was attributed to varying temperatures which were not conducive to the growth of the organism responsible for acid development. The Laboratory designed and had some equipment made which will not only incubate the mother culture at the proper temperatures but, in addition, will properly pasteurize the milk and sterilize the equipment for making the transfers. It is to be hoped that all factories will install one of these units.

Creamery surveys and analyses of water samples constituted an important part of the laboratory work. These analyses gave valuable information as to the source of contamination, and made it possible to eliminate serious defects which, if not checked, would have caused heavy financial loss to the industry. Information on chlorination and chlorine stock solutions was supplied from the laboratory to creameries having an impure water supply.

BUTTER WEIGHING SERVICE

Official weighers check weighed 4,239 fifty-six pound boxes of butter and issued weight certificates on a total of 34,027 boxes during the year. At the latter part of the year it was found that stocks of creamery butter in Alberta were in excess of requirements for western markets, and several large factories in the eastern part of the Province assembled and shipped carlots of butter to eastern markets. This necessitated appointing additional check weighers at these points to prevent interference with the regular duties of the inspectors, who in the majority of cases act as official weighers.

REVENUES

Revenues from creamery and cheese factory licenses amounted to \$585.00; graders' and testers' licenses, \$548.00; cow testing service, \$151.00; and cheese starter service, \$190.50, making a total revenue of \$1,475.50, as compared with a total of \$1,287.50 the previous year.

Collections for the Cream Grading Trust Account have been satisfactory and ample reserves are available for bad accounts. The auditors found this account in order, and the surplus for the fiscal year ending March 31st was refunded to the creamery operators. Anticipating an increase in production, it was decided to reduce

the levy for the fiscal year, commencing April 1, 1941, from 10c per 100 pounds of butterfat to 8c per 100 pounds.

COW TESTING SERVICE

Increased interest was shown by herd owners in the Cow Testing Service. At October 31st, 1941, which marks the close of the testing year, there were 187 herds, composed of 1,974 cows, under test as compared with 149 herds and 1,391 cows a year earlier. This increase in the number of cows under test can be partly attributed to work of the Cow Testing Supervisor, who has been able to show many herd owners the real value of this work, and also to the fact that the producer himself is fast realizing that the production of his herd cannot be increased without some form of record keeping. Assuming that the number of cows on the Federal R.O.P. Service was not greater than those of the Provincial Cow Testing, then a record of production on less than one per cent. of the total dairy cows is being kept. Before much improvement can be noted in the average production per cow, it is necessary that records be kept on a much larger per cent of the milk cows.

Personal visits from the Dairy Branch fieldman were of great value in supplying information to the herd owner on feeding, breeding and herd management problems. In addition to this assistance, all of those on the service were supplied with a yearly report, which indicated the average production of all herds, the average of high and low herds and the average of the owner's individual herd. A Stable Breeding Record Form and copies of addresses given at the Dairy Convention on production problems were also sent to all members.

Realizing the value attached to certificates, the Dairy Branch, early in the year, made a change whereby certificates of different categories would be issued instead of a statement. The new certificates take into consideration the production of the cows on a butterfat basis, and it is now possible to receive certificates with a gold, red or blue seal, depending on the amount of butterfat produced. These should prove of additional value to the herd owner.

A competition designed to increase the average production per herd was announced early in the season. This competition is sponsored by the Alberta Dairymen's Association and the Department of Agriculture, and all herds likely to be among the winners are check tested by the Cow Testing Supervisor.

To arrive at a comparative production of the cows under test in 1941 with those of 1940, it was necessary to take only those herds completing a full year's testing, as a number of junior dairy calf club members only conducted this work for part of the year.

The following table shows the production of milk and butterfat for these herds during the past two years:

	1941	1940
Number of herds under test	165	100
Number of cows under test	1,747	1,003
Average production of milk	5.184	5.090
Average production of butterfat	196.0	193.9

DAIRY FARM STUDY

A report on the first year of the Dairy Farm Study conducted by the Dominion and Provincial Departments of Agriculture, the Board of Public Utility Commissioners and the University of Alberta has been prepared. Copies have been made available to the

above-mentioned agencies conducting the survey and, in addition, over 400 copies of the report have been distributed to producers.

At the recent Milk Price Hearing the statistics on the data collected were made available to the Board of Public Utility Commissioners for use in consideration of price fixing on whole milk and inspected cream. There has been considerable analysis done which extends beyond the scope of the original report, and this information will be available as desired.

The study has been continued through the second year, with the area being extended to include Calgary and Lethbridge. In all, there were 205 dairy farm account books completed and closed in the Edmonton area, including whole milk, inspected cream, churning cream and cheese milk shippers for the 1940-41 season, while for the 1941-42 account year there have been 190 books set up in the Edmonton area, 56 in the Calgary whole milk area, and eight in the Lethbridge whole milk area. The fieldmen have made second calls to nearly all of these 254 farms, bringing the entries up to date. Analysis on the 1940-41 books is proceeding, and the results will be available early in 1942.

In addition, books were provided and some supervision given to a study of dairying possibilities on irrigated land in the Coaldale and Rosemary districts. The keeping of over 50 accounts is being made possible by collaboration with the P.F.R.A. Land Utilization research group.

INSTRUCTIONAL WORK

Instructional work with the buttermakers and cheesemakers has again been one of the functions of the Dairy Branch staff. In addition, speakers were supplied for producers' field days, agricultural short courses and radio addresses. The Dairy Branch co-operated with the Dairy Department at the University in conducting a four weeks' Creamery Short Course and a two weeks' Short Course for Cheesemakers. Regional conferences for buttermakers were again held during early May, and the number increased from four in 1940 to five in 1941.

The call for increased production of dairy products to aid Canada's war effort brought a number of enquiries to the Dairy Branch office for up to date information on production problems. A bulletin dealing with the care and management of the dairy herd was prepared by members of the staff and widely distributed through the dairy factories to interested producers throughout the Province. A number of circulars dealing with a variety of subjects such as Fat Losses in Buttermilk, Conserving Milk and Cream Cans, and Avoiding Frozen Milk and Cream, were also prepared and distributed from the Dairy Branch Office.

STAFF CHANGES

R. G. Gault was temporarily appointed Cheese Instructor on March 17th, to take over the duties of L. M. Silcox, who had been granted leave of absence from November 1st, 1940.

T. W. Clarke obtained leave of absence May 9th to join an artillery unit of the C.A.S.F.

V. G. Macdonald was appointed May 13th to replace Mr. Clarke as a fieldman for the Dairy Farm Study Work. He resigned on July 5th to accept another position.

B. J. McBain was appointed July 7th to fill the position vacated by Mr. Macdonald.

DEPARTMENT OF AGRICULTURE

DATA

The following tables set forth the details of dairy production for 1941 and statistical information concerning dairying in former years:

MONTHLY AVERAGE NET PRICES ESTIMATED PAID BY CREAMERIES IN ALBERTA
PER POUND OF BUTTERFAT IN "SPECIAL GRADE" CREAM,
F.O.B. SHIPPING POINT, FOR FOUR YEARS

	1941		1940		1939		1938	
	F.O.B.		F.O.B.		F.O.B.		F.O.B.	
	Cents	%	Cents	%	Cents	%	Cents	%
January	32.5	(4.5)	24.5	(4.5)	17.2	(4.2)	25.7	(3.8)
February	31.0	(4.6)	24.0	(4.7)	16.7	(4.0)	29.5	(3.8)
March	32.0	(5.1)	24.3	(5.0)	16.5	(4.4)	33.5	(4.5)
April	29.5	(6.6)	23.5	(5.9)	16.5	(5.9)	32.5	(6.2)
May	27.0	(10.9)	19.7	(9.5)	16.4	(10.5)	25.1	(9.6)
June	28.0	(14.2)	18.1	(15.8)	17.5	(15.6)	20.6	(15.4)
July	31.0	(14.1)	17.5	(15.6)	17.7	(16.0)	21.4	(15.8)
August	34.0	(12.3)	17.1	(13.0)	17.0	(13.1)	19.2	(13.3)
September	32.5	(10.3)	17.0	(8.9)	19.8	(9.1)	17.2	(9.9)
October	29.5	(7.4)	22.3	(6.9)	24.5	(7.2)	16.5	(8.1)
November	29.5	(5.5)	26.1	(5.3)	24.5	(5.4)	16.5	(5.3)
December	30.0	(4.5)	29.3	(4.9)	24.5	(4.6)	16.5	(4.3)
The Year	30.34	(100.0)	20.75	(100.0)	18.62	(100.0)	22.14	(100.0)

NOTE: The figures enclosed in brackets represent the monthly percentages of the cream receipts for the year.

CREAMERY BUTTER PRODUCTION

Year	Creameries	Pounds Butter	Selling Value	
			Total	Cents per lb.
1920	53	11,821,291	\$ 6,555,509	(55.45)
1925	99	19,630,101	6,959,059	(35.45)
1930	92	17,716,744	4,968,227	(28.04)
1931	93	22,957,922	4,711,231	(20.52)
1932	95	21,016,048	3,512,685	(16.71)
1933	96	23,852,350	4,308,962	(18.10)
1934	96	25,601,447	4,830,793	(18.80)
1935	97	23,094,707	4,588,917	(19.90)
1936	96	25,491,105	5,501,767	(21.60)
1937	96	26,323,562	6,449,273	(24.50)
1938	97	31,242,357	7,157,624	(22.91)
1939	96	29,749,958	6,265,341	(21.06)
1940	95	29,796,520	6,647,604	(22.31)
1941	94	35,316,143	10,789,082	(30.55)

FACTORY CHEESE PRODUCTION

Year	Factories	Pounds Cheese	Selling Value	
			Total	Cents per lb.
1920	7	398,750	\$ 110,355	(27.70)
1925	14	1,473,835	306,604	(20.80)
1930	8	1,035,352	175,392	(16.94)
1931	10	1,040,588	118,390	(11.38)
1932	12	1,439,715	146,177	(10.15)
1933	11	1,437,387	149,593	(10.40)
1934	11	1,370,425	154,138	(11.20)
1935	11	1,364,526	168,280	(12.33)
1936	12	1,451,735	190,469	(13.00)
1937	14	1,838,589	268,434	(14.60)
1938	15	2,451,821	348,404	(14.21)
1939	19	2,196,157	264,198	(12.03)
1940	18	2,705,853	385,584	(14.25)
1941	18	3,140,978	614,061	(19.55)

TOTAL ANNUAL VALUE OF DAIRY PRODUCTS

1900	\$ 546,476	1934	\$14,391,204
1910	7,855,761	1935	14,252,500
1915	15,896,586	1936	15,505,800
1920	34,000,000	1937	17,137,900
1925	23,002,000	1938	18,587,918
1930	18,675,500	1939	18,069,733
1931	15,750,000	1940	19,532,344
1932	11,850,000	1941	27,376,772
1933	12,950,000		

MILCH COWS

Year	Cows	Year	Cows
1901	46,101	1934	461,700
1906	101,235	1935	464,200
1911	147,687	1936	458,200
1916	277,324	1937	453,600
1921	432,838	1938	440,900
1926	436,500	1939	429,200
1931	385,000	1940	416,800
1932	424,000	1941	418,000
1933	406,520		

REPORT OF THE POULTRY COMMISSIONER

(C. W. TRAVES)

During the past five years the poultry industry of Alberta has shown steady progress, and possibly the year 1941 will prove to be the outstanding year for the poultry industry, not only for Alberta but for the whole of Canada. Previous annual reports have stressed the fact that, unfortunately, all too often the tendency was to consider poultry as a sideline of agriculture and that the orderly marketing of poultry products was not receiving the attention that was being given to other agricultural products. This was particularly true as far as the export markets were concerned. The licensing of poultry dealers was having some effect on the marketing conditions. The tightening up of egg grading regulations and their enforcement was having a beneficial effect as far as the marketing of eggs was concerned, but the prospects were that as soon as a surplus accumulated there would prevail the lowest price levels in years. The domestic market had improved considerably, largely due to increased purchasing power, but the increase in the poultry population and increased production from that population without any hope for sales to Britain, presented a future devoid of enthusiasm. True, the Alberta poultry producers had voted in favour of proceeding under Part I of "The Alberta Marketing Act," and an Alberta Poultry Producers Marketing Board had been set up, but without any export markets the price future for eggs at the commencement of 1941 was far from encouraging.

When least expected, the British Ministry of Foods placed an order for 250,000 cases of Canadian eggs. No sooner was this order accepted than it was increased to 500,000 cases, while further orders brought the total to 584,000 cases, or 1,520,000 dozens. The placing of these orders changed the Canadian poultry picture completely. In a few days the definite prospect of a heavy surplus with the lowest egg prices in years changed to one of a definite shortage of Grade A Large, Grade A Medium and Grade B eggs, and, although the prices offered and accepted for the various grades at time of shipment were not very high, they did give some margin of profit to the producers and saved what appeared to be an inevitable market and price collapse.

The Special Products Board at Ottawa, trade interests and others who performed the duties of accumulating, grading, transporting and all other details pertaining to these shipments of eggs on such short notice did a magnificent job, and are deserving of high commendation.

The early part of July it became quite apparent that the British Ministry of Foods realized the necessity of quality eggs in the diet of a people living under present war conditions, and that further large orders for Canadian eggs would be forthcoming. Unfortunately, the hatchery season was over, so that it would be impossible to materially increase the laying poultry population to meet the heavy production demand for late 1941 and 1942 spring and summer export deliveries. The only alternative was to put on an extensive Dominion wide campaign to raise the pullets as efficiently as

possible and to carry over all yearling birds of good quality that accommodation could be provided for.

Meetings were called at the larger market centres of Alberta to discuss the new situation and to lay plans to meet it. The response of all parties—producers, trade interests, hatcherymen, feed manufacturers, etc.—was very encouraging. The majority opinion was that the future of the poultry industry for the duration of the war and possibly for some time afterwards was encouraging, but that any reorganization at the present time should be modelled on such a basis that post-war conditions would be taken into account. The Poultry Council of the Alberta Poultry Federation met with other poultry interests, and it was agreed to amend the Constitution and By-laws to take in any groups or individuals who were interested in and could prove of service to the poultry industry. The final reorganization will be completed at the time of the Federation's annual meeting, to be held on January 14th, 1942.

Poultry meeting markets during 1941 were the best for many years, and the exceptionally good demand at the highest price levels in some years for turkey, fowl, chickens, geese and ducks for Christmas and the New Year were such that not only did the producers receive a good margin of profit on the higher grades, but the carry-over in storage will be at the lowest level in years, a good omen for 1942 poultry meat prices.

Not only must we increase our production, but we must produce less low grade eggs and more Grade A eggs. Unfortunately, too many producers give their flocks very little attention and too many persons handling the product do so in a careless manner, resulting in a large percentage of low grade eggs arriving on the market. Hundreds of thousands of pamphlets have been distributed, newspaper and magazine articles written, talks have been given over the radio, at field days and other meetings, as well as to hundreds of individual producers, all these talks stressing the fact that we must not only produce more eggs, but we must produce eggs of the highest grade, and these eggs must be handled in such a manner that the quality will be maintained so that these eggs will reach Britain in the best possible condition and provide the maximum food value over there.

It was generally felt that the announced prices to be paid for the present commitment of 30,000,000 dozen was not sufficiently high to compensate the producers for the increased costs of feed, equipment, labour, etc. From all parts of the Dominion petitions were sent to Ottawa stating the case, and asking that freight be paid on export eggs to seaboard or that a bonus on export eggs be paid to see that the poultry producers of Canada be assured at least a reasonable margin of profit on their production. The recent announcement that 3 cents per dozen bonus would be paid for Grade A eggs exported had the immediate effect of halting market declines, and in districts already on export price basis Grade A eggs rose 2 cents to 3 cents per dozen. With this bonus being paid only on Grade A eggs, it will be up to the producers to produce that quality of eggs in order to qualify for the bonus. The additional half-cent per dozen bonus on all oil processed Grade A eggs to be paid to wholesalers will mean the oil processing of large quantities of Grade A eggs, meaning that these eggs will reach Britain in the best possible condition, even if they have to be held in storage several months before being exported. Quality production and maintenance of

quality necessary to obtain the bonus will greatly improve the financial position of our poultry industry for 1942.

LICENSING REGULATIONS

After three and one-half years' experience with licensing and bonding of dealers in poultry and poultry products, it was felt that, while much good had been accomplished, the regulations should be revised somewhat, and this was done. The revised regulations became effective November 1st and, although the peak of the poultry season was at hand, many persons serving no purpose to the industry were eliminated, and it is felt generally that under the regulations as they now stand the present more or less unsatisfactory condition prevailing, especially with respect to dealing in live and dressed poultry, can be greatly improved without undue delay.

The appointment of an Advisory Committee on Licensing by Ministerial Order has been another step forward, and should prove of definite value.

Under the revised regulations the following licenses were issued during November and December:

Truck Licenses	443
Graders' Certificates, first class	44
Graders' Certificates, temporary	17
Wholesale (\$10.00)	32
Branch Premises and \$5.00 Wholesale	100
First Receiver	597
Hatcheries	20
Total Licenses Issued	1,253

It will be noted that graders are being licensed. At the present time this applies to graders of eggs only, as we have not any compulsory regulations covering the grading of dressed or live poultry. By making it compulsory for egg graders to apply annually for a certificate and by seeing to it that they perform their duties in a competent manner if they are to hold the certificate or have it renewed, should soon remove a good deal of the present criticism regarding egg grading.

PROVINCIAL POULTRY PLANT

The Provincial Poultry Plant received two serious setbacks the early part of the year. The plant foreman and the only other trained helper left for overseas service at the same time, and it is hard to obtain experienced poultry help in peace time, let alone just now, especially for a pedigree breeding and demonstration plant. Once we were well into the hatching and brooding season the plant manager took ill, and after a period in hospital found it necessary to take three months sick leave of absence. In spite of this, the work progressed and, although the turkeys were somewhat neglected, again largely due to lack of equipment, a large number of pullets, especially S.C. White Leghorns, were put into the laying house. The quality of these pullets was very gratifying, and this is the first time in several years that the plant has produced more winter eggs than the Oliver Mental Institute can handle.

With the breeding behind the pullets, it was decided to enter 200 S.C. White Leghorns and 75 S.C. Rhode Island Reds under the Dominion R.O.P. programme, and up to the end of the year approximately 130 pedigree breeding cockerels were sold to Alberta Approved Flock owners.

With the programme developed to the present stage, it is planned to sell approximately 400 wing banded cockerel chicks to Alberta Approved Flock owners during the early part of 1942. This will not only give greater distribution of quality stock for breeding purposes, but will increase the accommodation for the cockerels carried on the plant, which in turn should assist in improving the quality of those birds distributed as mature blood tested and banded cockerels during the fall and early winter of 1942.

The past four years at the plant have been devoted largely to a programme of building up and improvement. Although this programme will continue, the plant has now reached the stage where it will show increased revenue and, what is equally if not more important, will prove of ever increasing value to the poultry industry of Alberta through the distribution of breeding stock, experimental work, demonstrations, etc.

Due to health reasons, the Poultry Plant manager asked to be relieved of his duties at the plant and to be granted permission to again take up field work. This request was granted, and Wilson Henderson, M.S.A., for some years in charge of the University of B.C. Poultry Plant, was brought from Vancouver to fill the position of Poultry Plant Manager, and we feel quite certain that B.C.'s loss will prove to be Alberta's gain.

ADDITIONAL POULTRY DEMONSTRATION PLANTS

The laying house at the Olds School of Agriculture was remodelled during the summer of 1940, and now makes an up-to-date laying uit. The Provincial Poultry Plant at Oliver is too far for poultrymen south of Red Deer to visit, and it would be a step forward if a small but modern breeding, brooding, rearing and laying plant could be established at Olds. In addition, a small flock of high quality turkeys should be carried at the school. A similar plant should be instigated at the Vermilion School as soon as it again commences student instruction. The largest percentage of the students from our Schools of Agriculture return to the farms, and it is at the schools that they should receive the fundamentals of efficient poultry husbandry.

A similar plan, if carried out at the Brooks Horticultural Station, should prove of material benefit to the south-eastern portion of the Province.

DISEASE CONTROL, BLOOD TESTING AND FLOCK APPROVAL

These three phases of the Poultry Branch work are closely interwoven. Alberta Approved Flocks are being tested by the Whole Blood method, as during the last three years and up to the present those in authority on Hatchery Approval Policy recognize this method of testing for intra-provincial shipment only. Present indications are that shipment of Alberta chicks will not be permitted to the Provinces of Saskatchewan and Manitoba for the 1942 chick season.

The comparative work between the two methods of testing carried out by the Poultry Branch in co-operation with the Dominion Veterinary Laboratory, Lethbridge, was published in scientific form in the 1941 February issue of "Scientific Agriculture". As Alberta is not the only Province interested in the Whole Blood method of testing for Pullorum disease, the work being conducted here was followed with a great deal of interest throughout Canada, and pub-

lication of this article created a considerable amount of favourable comment. However, no official recognition of this test for inter-provincial shipment is apparent at present.

ELEVEN YEARS' BLOOD TESTING IN ALBERTA

Year	Flocks	Birds	% Reactors
1930-31	148	18,608	20.2
1931-32	232	31,177	12.9
1932-33	188	26,381	8.6
1933-34	205	33,295	7.3
1934-35	645	104,858	11.2
1935-36	615	94,536	5.5
1936-37	815	136,228	5.5
1937-38	677	108,908	4.8
1938-39	534	92,355	4.51
1939-40:			
Hatchery Approval	437	80,927	5.1
R.O.P.	34	13,853	3.5
1940-41:			
Hatchery Approval	412	81,868	2.6
R.O.P.	34	15,801	3.05

It will be noticed by the above table that considerable progress has been made in the control of Pullorum disease. It will also be noticed that for the last two years the Hatchery Approval and R.O.P. flocks have been segregated, and it should be kept in mind that two Dominion R.O.P. inspectors devote their time to these few R.O.P. flocks and that these entries are practically the same every year, whereas in the Poultry Branch three men look after all the flocks, service calls, field days, etc., and only receive temporary assistance during the blood testing period. Further, there is quite a percentage of new flocks every year under Hatchery Approval.

Although testing is not completed for the 1941-42 season, it is sufficiently far along to draw some conclusions, and several features are quite evident at the present time. In the first place, about 25% of the chicks sold in Alberta during 1941 were brought in from other provinces or were hatched from eggs that were brought in. All breeding stock in these provinces are tested by the Tube Agglutination method. It is quite evident that Alberta's Hatchery Approval flocks will show a decline in percentage of Pullorum reaction for 1941-42, while Alberta's R.O.P. flocks, under Dominion supervision and tested by the official Tube Agglutination method, will show an increase in percentage of Pullorum reaction of not less than 75%.

Less than 25% of our Hatchery Approval flocks obtained their stock outside of the Province, and yet at least 60% of the flocks that were turned down because of poor quality or dropped out because of excessive reaction to the Pullorum test and the flocks that have had to be retested are from this outside stock. Alberta could make a much better showing in the control of Pullorum disease if it were not for her R.O.P. flocks and the lack of protection she receives because of the present Dominion attitude on Hatchery Approval Regulations.

It has been pointed out in previous reports that the Whole Blood method as used in Alberta is as efficient as the Tube method, and effects considerable financial savings to the Government and to the flock owners, something we will have to practice in our war effort.

The Provincial Veterinary Laboratory has proved of great value to the poultry industry in the control of poultry diseases and parasites.

The permanent and temporary staff on the blood testing and flock approval work have all stated that the pullets banded this year from Alberta stock were the highest quality that they have

ever handled. It is the intention of the Poultry Branch to do considerable work this year towards raising the percentage hatch of Alberta hatching eggs. Hatchery men stated that during the 1941 season Alberta chicks were the best quality handled to date and that complaints were negligible, but we must raise the percentage hatch.

Turkeys banded under Alberta Record of Merit were again tested by the Tube method, as the Whole Blood antigen used for chickens is not satisfactory for turkeys.

Hatchery Approved birds will show an increase of approximately 25% over last year and banded turkeys about 30% increase.

Following the Christmas poultry season, the trade interests and inspection services stated that this year the live poultry and dressed poultry receipts were of the highest average grades ever taken in, and several of the wholesalers stated that they believed this to be largely due to the educational work along quality production lines by the Poultry Branch, Alberta Department of Agriculture.

The poultry industry of Alberta is very definitely on the up trend, both as regards numbers and quality. With poultry markets, domestic and export, on a stabilized basis and receiving full recognition, 1941 should prove to be the eventful year of the poultry industry.

PUBLICATIONS

Many thousands of Alberta's poultry bulletins and leaflets, range, brooder, single and double-deck poultry house plans were distributed, and a considerable request for this information comes from other provinces as well. The following were added to our publications during 1941:

- Leaflet No. 36—Disorders of the Cloaca and Vent.
- No. 37—Fowl Paralysis and Leukemia.
- No. 38—Sod Poultry House.
- No. 39—Production of Quality Market Eggs.
- No. 54—Poultry Catching Crate.

REPORT OF THE ANIMAL PATHOLOGIST

(T. LLOYD JONES)

The purpose of this Branch is to assist in reducing losses due to disease among live stock. To this end, the task of directing the work undertaken at the Veterinary Laboratory has had two objectives in view. One of these is to provide a service which will help to reduce losses by applying measures of control which are known to be effective, but which do not appear to be widely practiced. The other is to investigate the diseases about which knowledge is lacking.

The first of these objectives has warranted more time and attention than the second, and it is apparent that a valuable service can be rendered by attempting to bridge the gap between that which is known regarding the prevention of disease and the application of such knowledge by the farmer. In the future it is hoped that emphasis may be placed on the second of these dual objectives, but at the present time there is a preponderance of reasons why the Veterinary Laboratory should provide useful services rather than confining the work to fundamental research. It is in considering the needs for establishing this laboratory last year that such a decision is arrived at, and it does not reflect a lack of appreciation of the value of fundamental research. The nature and extent of the services rendered have been developed according to the facilities and staff available, with attention being focussed on work likely to have special value in war time.

DIAGNOSTIC SERVICE

The laboratory diagnostic service has been used by an increasing number of veterinarians, and the volume of specimens received from farmers in districts where no veterinary services are available is a hopeful sign that assistance can be extended to live stock men who are denied local professional aid.

Number and nature of specimens received are summarized in Table 1:

	Live	Dead	Portions	Total
Swine	209	293	53	555
Horse			21	21
Cattle	2	1	84	87
Sheep	3	4	10	17
Goat		1		1
Moose			1	1
Fox	2	15	23	40
Mink	13	79	4	96
Nutria		1		1
Muskrat		2		2
Raccoon		2		2
Fitch	1			1
Rabbit		6	1	7
Dog	1	3	3	7
Cat		3		3
Marten		1		1
Chicken	245	235	29	509
Turkey	16	29	9	54
Duck	1	1		2
Peacock	2			2
Pheasant		5		5
Partridge		1		1
Prairie Chicken		1		1
Goose		1		1
Canary		2		2
Miscellaneous			16	16
Total	495	686	254	1,435

There are 25 different species represented in the 1,435 specimens submitted. Most of these required a careful examination involving laboratory technique.

It is often essential to have the history of a case of disease before a definite diagnosis can be given, and a prerequisite of virtually all cases is that the specimen should be alive or fresh enough for a complete diagnosis to be made. A post-mortem examination may reveal certain lesions of disease, but if putrefaction had advanced so that the carcass is unsuitable for bacteriological or histopathological examination, a diagnosis of "pneumonia" or "gastritis," etc., is given, depending on the lesions found. If, however, a complete examination is possible, the case may be recorded as "Pasteurella infection", "Salmonella infection", "distemper", etc. It is usual for the most valuable advice on control to result from the most exhaustive examination on suitable material. Some specimens present two or more pathological conditions, in which case it is necessary to determine if possible which is most seriously concerned in causing losses. Advice on control must take this into consideration.

If a specimen shows the co-existence of two or more significant diseases, all are recorded in the tables which follow:

TABLE 2—SWINE

Abortion	1	Pneumonia	69
Anaemia	50	Poisoning	20
Avitaminosis	26	Pyonephritis	1
Brine poisoning	4	Ricketts	3
Caecal worms	2	Roundworms	49
Corynebacterium infection	2	Salmonella infection	2
Errors in feeding	81	Septicaemia	15
Gastritis and Enteritis	55	Snuffles	1
Hernia	3	Swine erysipelas	12
Infection of newborn	34	Swine influenza	12
Intersusception	1	Tetanus	2
Malignant oedema	7	Tuberculosis	2
Mange	5	Whipworms	1
Necrotic enteritis	61	Miscellaneous	8
Osteohaematochromatosis	1	No evidence of disease or putrid	7
Parasitic skin	1		
Pasteurella infection	32	Total	576
Peritonitis	5		

TABLE 3—POULTRY

	Chickens	Turkeys	Miscellaneous	Totals
Aspergillosis	3	4		7
Blackhead	1	1		2
Cannibalism	3			3
Chilling or over-heating	29			29
Coccidiosis	71	25		96
Egg bound and internal laying	7			7
Enteritis	2	1		3
Fowl cholera	3			3
Fowl paralysis	23			23
Impaction	5			5
Injuries	4			4
Laryngotracheitis	12			12
Leucosis	12			12
Nutritional disorders	32	9	9	50
Parasites, internal	21		1	22
Parasites, external	7			7
Pullorum (adult)	7			7
Pullorum (chick)	148	2		150
Roup	5	3		8
Tuberculosis	58	9		67
Tumours	9			9
Typhoid	2			2
Miscellaneous	18			18
No evidence of disease or putrid	27		4	31
Totals	509	54	14	577

TABLE 4—MISCELLANEOUS SPECIES

	Horses	Cattle	Sheep	Goat	Moose	Fox	Mink	Nutria	Muskrat	Raccoon	Fitch	Rabbit	Dog	Cat	Marion	Miscellaneous	Totals
Abortion		1															1
Abscess		3	3				10										17
Actinomycosis		1															1
Blackleg		5															5
Blood																	2
Breeding trouble						1											1
Calculi							8										8
Calf diphtheria		4					4										4
Coccidiosis		1				1	3					3					8
Corynebacterium infection		1			1												2
Dentigerous cyst	1																1
Distemper	2						9				1						10
Encephalomyelitis	2																2
Errors in feeding	1		2				14					2					19
Faecal samples	9	1				22											32
Feed																2	2
Food poisoning						7	16										23
Forage poisoning	1																1
Gastritis and Enteritis									2				1				3
Hemorrhage							2										2
Hookworm						2											2
Hydronephrosis			1														1
Infectious anaemia	2																2
Infectious enteritis														3			3
Injury							2										2
Malignant oedema		3															3
Mange							1						1				2
Mastitis		8															8
Meat																8	8
Metritis	1																1
Milk																3	3
Neoplasm	1												3				4
Nursing sickness							7										7
Nutritional anaemia							3										3
Nutritional disorders						2											2
Pasteurella infection		2	1														3
Pneumonia			1			2	15	1		1							20
Poisoning	1	2	2			1							1				7
Pyelonephritis		1															1
Pyemia						1											1
Ricketts							1										1
Roundworms			1			1											2
Sore mouth			1														1
Staph. infection	1	1															2
Stiff lamb's disease			1														1
Tapeworm										1							1
Tapeworm cysts												2					2
Traumatic pericarditis		2															2
Tuberculosis		1	1				1										3
Tympanites				1													1
Verrucosis													1				1
Water																1	1
Miscellaneous		40															40
No evidence of disease or putrid	1	10	3			1	4										19
Total	21	87	17	1	1	41	96	1	2	2	1	7	7	3	1	16	304

SWINE

The diseases found most frequently in this species are preventable by good housing and feeding and by having a programme which includes simple routine practices for the prevention of common ailments. Without suitable quarters for housing, to include adequate ventilation, warmth and sanitation, it is difficult to prevent *Pasteurella infection*, *pneumonia* and other serious diseases. Lack of sanitation usually aggravates the menace of worm infestation. When iron in some form is not fed to penned pigs before they begin to eat from the trough, anaemia usually occurs. If pigs begin feeding on unsifted oat chop, the rough hulls often produce *gastritis* and *enteritis* (inflammation of the lining of the stomach and intestines).

Necrotic enteritis, which is so common, is a germ infection, characterized by inflammation and necrosis of the lining of the

large intestine. This disease usually occurs in pigs from weaning time to an age of four months, housed in cold and filthy pens or having access to hoglots with long standing mud wallows. Other predisposing causes are worm infestation, changes of diet, the presence of rough particles in the grain, and perhaps the most important dietary cause is a deficiency of nicotine acid—a part of the vitamin B complex—in the grain. The last mentioned is usually associated with a train of symptoms which begin with lack of appetite, followed by evidence of itchiness in the skin, loss of weight and a persistent diarrhoea. Symptoms of this nature warrant the feeding of dried brewer's yeast, which is rich in the whole vitamin B complex.

So far as we are able to observe, the acute swine infections, e.g. *Swine erysipelas* and *Swine influenza*, are now common in this Province. It is important to realize that a group of acute infections in swine are difficult to differentiate by clinical examination alone. A variety of different microbes produce very similar symptoms, and it is often necessary to demonstrate the actual organism in a given outbreak before a definite diagnosis is possible.

The foregoing remarks on swine are intended to amplify the information given in Table 2 and to show how the diagnostic service gives us an opportunity of determining how we should approach the disease situation in this species.

POULTRY

An increasing number of poultry farmers are using the services of this laboratory, and more than twice the number of poultry specimens were received this year compared with 1940.

Co-operation is maintained with the Poultry Branch, and the improvement policies administered by the Poultry Commissioner include measures dealing with disease control, in which we are concerned.

The relative incidence of the diseases recorded in Table 3 is not at great variance with the findings in other provinces. This, however, does not minimize the seriousness of such diseases as Avian Tuberculosis, Coccidiosis, Pullorum infection and nutritional disorders. The last mentioned includes vitamin deficiencies and improper feeding.

MISCELLANEOUS SPECIES

Fur-bearing Animals:

The incidence of distemper in mink was not at all serious this year. Tissue vaccine was prepared at this laboratory and was used on a number of ranches, but the general absence of distemper among unvaccinated mink showed that this procedure was probably unnecessary.

A variety of other diseases were found in the mink examined. One condition, included in "errors in feeding", has reference to the losses which occur from rancid fat being present in the feed. Rancid fat is usually present in the fish portion of the diet, and while the fish may be delivered to the ranch in a frozen state, there is no assurance that rancidity could not have occurred before freezing.

Fox farmers do not appear to have suffered serious losses from disease. There was disappointment regarding the low increase in both foxes and mink this year. It may be stated as a general remark, however, that where emphasis in selection is being placed on

quality of fur, the factors of vigour, constitution and prolificacy are likely to be submerged.

The finding of a tapeworm in a captive racoon is of interest.

Cattle:

Attention has been given to a disease of cattle simulating Blackleg, but occurring in the winter time. One farmer was concerned about losses allegedly due to the microbe of Blackleg (*Clostridium chauvoei*) after his calves had been immunized against this disease. Cultural examination showed that the infection was one of *Clostridium septicum* and not true Blackleg. This infection is sometimes referred to as Stable Blackleg, and is not a common disease.

Hemorrhagic Septicaemia or Shipping Fever caused considerable loss among feeder cattle especially during the period when they were being transferred for winter feeding. We were requested to make a cultural examination of tissue from cases of this disease for a confirmatory diagnosis.

Other Species:

A number of diseases were diagnosed in a variety of species, none of which deserve special comment. Recognition of Encephalomyelitis in horses was largely confined to a clinical diagnosis by practicing veterinarians. We received a number of horse brains for laboratory diagnosis, but only two yielded the virus of this disease.

BANG'S DISEASE

A plan for the distribution of vaccine to be used in the control of Bang's Disease in cattle is supervised by this branch. A number of investigations in the form of controlled experiments and field studies have been carried out in many countries with a view to appraising the value of vaccination as an aid in the control of Bang's Disease. In the United States, official recognition of this procedure was given when the Bureau of Animal Husbandry reported favourably on a plan involving the use of vaccine. This report was presented at the annual meeting of the United States Live Stock Sanitary Association in December, 1940. Following this announcement, we were encouraged to hope that vaccine would be permitted to be used in Canada. Early in November, and after considerable negotiation and delay, we were able to announce a plan which has been favourably received by the live stock men of this Province.

The Veterinary Director General issued a permit to the Minister of Agriculture for the importation of Strain 19 *Brucella abortus* vaccine, dated October 29th, 1941. This plan could not operate until such a permit was granted, but in the two months of its existence 10 herd owners have applied for the vaccine to be used in calves in their herds.

The vaccine is being distributed in accordance with the terms imposed by the Federal Health of Animals' Branch, and the Provincial Department of Agriculture is co-operating with herd owners and their veterinarians under the following conditions:

1. Initial blood test of all animals over four months of age to determine incidence of infection, and annual blood tests if herd is to be supervised by the Department in a project of calfhood vaccination.

2. If infection is sufficiently extensive to warrant the use of vaccine, all heifer calves between four and eight months of age shall be vaccinated.
3. Obtain blood samples from vaccinated calves within six weeks from date of vaccination to determine if "take" has resulted. Calves not showing a positive test must be vaccinated a second time. (These would be a small percentage of the whole.)
4. To obtain the best results from using the vaccine, herd owners are advised, but not compelled, to submit vaccinated animals to another blood test. This test should be made during the period from six months after vaccination to the time just before they are to be bred. Positive reactors on this test should not be bred, but they may remain as "open" heifers until future tests show they have become negative.
5. Owner must agree to report the death or disposal of any animal in the herd and must furnish the Department with the breeding history of vaccinated animals from time to time as required. The owner is expected to dispose of infected cattle when they can be replaced by vaccinated heifers.
6. The herd owner employs a registered veterinarian to take blood samples and administer the vaccine. Cost of these veterinary services are borne by the owner.
7. The Department of Agriculture supplies (1) sterile vials, (2) test charts, (3) ear-tags; and defrays expenses of shipping vials and blood samples between the Veterinary Laboratory and the Veterinarian's office.
8. The vaccine is distributed at cost to herd owners on application of their veterinarian.
9. In the initial stages of this plan, blood tests are made free of charge at the Veterinary Laboratory. The Department reserves the right to make a small charge if routine testing demands the employment of extra personnel.

EXTENSION SERVICE

An important part of our programme is to work with the Director of Agricultural Extension by contributing to meetings, short courses, demonstrations and field days. In these discussions, emphasis is placed on practical methods of preventing live stock diseases. Lantern slides and film strips made in the dark room of the laboratory are useful for this purpose. We have continued to provide a photographic service as time for such work has permitted.

REPORT OF THE PROVINCIAL APIARIST

(W. G. LE MAISTRE)

GENERAL

Production:

A record crop of 3,120,000 lbs. of honey, 24% above the previous record, was harvested by the beekeepers of Alberta in 1941. And this in spite of the fact that the average production per hive was 6% below normal. This production was possible because the number of hives has been rapidly and persistently increasing during the last few years (1938, 15,000 hives; 1941, 24,000 hives). The value of the honey and beeswax produced has increased from \$18,000 in 1938 to \$386,000 in 1941.

The recent development of the industry has been more noticeable as a sideline to farming rather than as commercial enterprises. The irrigated areas are becoming over populated with bees, some badly so. The greater expansion is to be found in the more northerly parts of the Province. In some districts, as in Census District 14, it has been demonstrated that quite large bee populations can be productive, while in others dense bee populations are uneconomic until greater acreages of bee-forage appear.

Season:

This year many hives were not up to full strength by the time the main honey flow began. Packages received in May did not build up nearly as well as those received in April.

Colony development was favoured in April by warm weather and by both good nectar and pollen flows. May became cool and unfavourable to bee-flight, resulting in a shortage of bee-food. Experienced beekeepers offset the lack of nectar by feeding syrup, but had no substitute for the pollen shortage.

The main honey flow began in southern Alberta on June 17th and continued until July 27th. The flow was fairly heavy, though in some locations the beet webworm moth was present in such numbers that bees were unable to obtain nectar for a week or ten days. The average production in irrigated areas was 157 lbs. per hive.

The main honey flow in central and northern Alberta began on June 27th and ended on August 5th. Dry weather in July reduced the crop so that, outside irrigated areas, the crop only averaged 100 lbs. per hive. Some locations enjoyed a second flow during August, but these were the exception.

Bees:

Eighty-four per cent. of the hives were established from packages in the spring. Though 27% of the hives were put into winter quarters, only 62% of these survived. Successfully wintered hives usually produce more honey than do packages. Alberta beekeepers are very dependent on the package bee business of the United States, since 84% of all our hives are established from such packages. Any regulations, prohibitions, delays or increase in costs have a profound effect on our honey production. Every year there are some heavy losses from some cause or another involved in this importation business.

The practice of wintering bees is of particular importance just now as a means of conserving foreign exchange. It is gratifying to note that there is some increase in the number of wintered-over hives.

	1940		1941	
	Production lbs.	Value	Production lbs.	Value
Honey	2,222,000	\$244,420	3,120,000	\$374,400
Beeswax	333,300	9,000	40,560	14,200
Total		\$253,420		\$388,600

Average price received, per lb.	1940	1941
Average production, per hive, lbs.	.11c	.12c
Number of beekeepers	101	130
Number of hives	2,200	2,400
	22,000	24,000

The sudden 52% increase in revenue to beekeepers is accounted for by a return to better prices, almost a normal average production per hive and an increase in the hives of the Province.

MARKETING

Since 1938 Canada has not had so large a crop of honey that marketing was a serious problem. Alberta's recent growth as a honey producing Province has thereby been assisted.

Commercial producers are able to load cars which, if not sold to Alberta wholesales, usually can be shipped to markets outside the Province. Some years, 1941 is an example, there is difficulty in obtaining suitable outside markets as a result of conditions in other Provinces. It seems, with the advent of the small producer who sells locally, that an increase in local consumption occurs up to a certain point. This point has not yet been reached in many districts; it soon will be. It is to be ready for this situation that producers are already working. A co-operative marketing association is now functioning. The volume of business being done by the co-operative is not very large, but it is fulfilling its aims by handling the honey not readily absorbed locally and selling it more advantageously than the producer could do it.

The prices of \$6.00 per case (48 lbs.) for 8 lb. tins, \$6.25 for 4 lb. tins, and \$6.50 per case for 2 lb. tins were fairly well maintained in wholesale lots during early winter. Retail prices have varied from 12c to 15c per pound. Some offers from Manitoba at prices below these made it difficult in the fall to make sales at Alberta prices, but when the export market opened up and it was discovered the Canadian crop was somewhat below normal, business improved.

Several inquiries were received for honey in bulk containers (65 lbs.) this year; furthermore, export business was limited by the British Ministry of Food to bulk containers. Alberta producers were unable to take advantage of any of this business because all their honey was packed in retail sizes. Alberta producers need confirmation of bulk container business by June, so that the containers can be procured before extracting in July. There is almost no demand for bulk containers locally and no facilities for repacking, so producers seldom pack in this size.

DISEASE CONTROL

	1940	1941
Number of apiaries inspected	844	825
Number of colonies inspected	5,876	7,621
Number of colonies diseased	228	299
Percentage of inspected colonies diseased	3.9%	3.9%
Percentage of all colonies diseased	1.1%	1.25%
Number of beekeepers registered	1,834	2,293
Number of colonies registered	18,033	23,223
Number of beekeepers not registered (estimated)	400	100
Number of colonies not registered (estimated)	4,000	1,000
Percentage of beekeepers not registered	18%	4%

By increasing the staff of part-time inspectors to nine it has been possible to reduce the cost of inspection by 10% and increase the number of hives inspected by 30%. In spite of this increased inspection, American Foul Brood continues to spread. Nine new centres of the disease have been discovered. Four diseased areas have been cleaned up. The Province has never been completely covered by inspection, so it is not known quite how widespread the disease has become. At least six of the newly discovered outbreaks were traced back, and it was found that infection probably occurred four or five years ago. When these cases were discovered, the disease had made so much headway that in most of them considerable losses were experienced in eradicating it.

With the increasing number of hives it is necessary, in order to maintain a healthy industry, to increase the inspection of apiaries. The success of the present system as employed in some districts where disease has been eradicated indicates that an adequate inspection service can reduce losses from disease to a minimum.

A diagnostic service is available to beekeepers. By sending in a sample from a hive suspected of diseases it is possible, by microscopic examination, to determine the nature of the disease and give instructions for appropriate treatment. Thirty-eight samples were received and examined.

EXPERIMENTAL

1. An experimental apiary is maintained on the farm of the Vermilion School of Agriculture. Tests are in progress to discover the proper dates for the treatment of both wintered and package hives for the prevention of swarming. The general method in use is the "Demaree swarm control system." There is, as yet, no reliable data on which to base recommendations to producers as to when to apply this system for the control of swarming. Results to date indicate that for the Vermilion district the proper dates to apply this manipulation are between June 20th and June 25th, whereas for southern Alberta the dates would be June 10th to June 15th.

2. A hive is maintained on scales at the Provincial Poultry Plant at Oliver to provide data on honey flows for the district. Further reliable information on honey flows obtained similarly from different parts of the Province would be a great help in determining the suitability and character of different districts for honey production.

3. A number of beekeepers complained of spoilage in the feed supplied to their packages in the spring. This loss is considerable in material and in partial starvation of colonies to which this feed has been given. Ordinary methods of sanitation failed to improve matters. A sample of this feed was obtained and carefully cultured on a special medium developed for the purpose. The organism responsible has been isolated and the approximate range of its effect

on spring feeds determined. So far, efforts to discover the manner in which it contaminates the feed have not been successful.

EXTENSION

There is a considerable demand for instruction in beekeeping. It is a new enterprise for most people, and consequently there is a great lack of general knowledge on the subject.

Instruction was given at 45 meetings and field days, at which more than 2,200 were in attendance. The interest and assistance of District Agriculturists in arranging these meetings and in helping the beekeepers in their districts is invaluable. Those districts most suitable to beekeeping have responded well to the interest taken in them.

A new bulletin entitled "Beekeeping for Beginners in Alberta" was published. Two thousand copies of the bulletin were obtained. The demand has exhausted the supply.

Mimeographs entitled "Uses of Honey in the Home", "Beekeepers' Calendar", "Wintering Bees", "Hints to Beginners", were distributed.

Some radio addresses of general interest on bees were delivered over CKUA during the winter season.

The duties of the secretary-treasurer of the Alberta Beekeepers' Association were undertaken by this Branch. This association assists its members educationally and in advising of market conditions.

Judges were supplied for four competitive honey displays.

A course of lectures in apiculture was given at the Vermilion School of Agriculture and a lecture to the boys at Olds.

REPORT OF DIRECTOR OF EXTENSION SERVICE

(R. M. PUTNAM)

More demands were made on the Extension Service during 1941 than in any year since its beginning. As specific quotas for agricultural products were announced and farmers speeded up their operations to meet Canada's commitments, a larger number of requests for information on agricultural problems, especially those pertaining to swine, dairy and poultry production, were received by the Agricultural Extension Service.

An extension service faces two problems. The first is to provide suitable information to those who desire it, and the second is to increase the number of people who will use new ideas in their farming operations. The latter problem is the more acute, for in spite of a fairly comprehensive Extension programme, there are some farmers who make no use whatsoever of technical information and the services offered by the Department of Agriculture. There is need of more assistance, especially in the preparation and planning of methods, to carry practical and useful knowledge to the rural people to enable them to improve their farming practices and raise their living standards.

Much more effective work could be accomplished if throughout the Province there was some form of organization comprising all farmers, the local groups of which could meet for the study and discussion of current and future agricultural problems. Such groups, co-operating with the Department through the Extension Service, could put to most effective use the wealth of practical and technical knowledge that is available.

The problems now facing agriculture, and those which will arise later on, will need for their solution the unreserved co-operation of all interested parties.

The Extension Service has endeavoured to co-operate as fully as possible with local organizations in the belief that much can be done by local people to solve some of their problems. In every community there are those who, through greater training or larger experience, can contribute worth-while advice and leadership on agricultural problems.

The Extension Service is most grateful to those who rendered assistance during the year. The staff of the Faculty of Agriculture of the University of Alberta was most generous in its co-operation. Officers of the various services of the Dominion Department of Agriculture have also been most helpful. Various local organizations in many parts of the Province aided the Extension work, and last but not least, are the officials of the Department of Agriculture whose help and co-operation were so freely given.

EXTENSION FIELDMEN

The Extension programme in Farm Mechanics was continued in 1941. Mr. F. F. Parkinson, Instructor in Farm Mechanics, Olds School of Agriculture, was again engaged as Extension Fieldman, and was assisted for part of the season by J. K. MacKenzie, Institute of Technology and Art, Calgary.

The programme took the form of a series of field days at which demonstrations were conducted to emphasize a number of important factors in operating farm machinery. The value of proper adjustments in decreasing draft was brought out by the use of a dynamometer, and slippage tests with steel and rubber tired tractors were conducted. Special attention was drawn to the need to conserve rubber tires in view of a shortage of rubber. Discussions also were held on tractor fuels, as high octane fuels are required for war purposes. The one-way disc was used for demonstrations at nearly every field day. Many of these implements were found to be out of adjustment.

During the summer a demonstration on Farm Mechanics was given at 31 field days, at which the total attendance was 2,800.

The demand for plans and information on farm buildings, electric fences, insulation, ventilation, etc., continues, and there is likely to be still greater demands for assistance in farm mechanical problems as mechanization grows, due to lack of farm labour. Much work is also necessary on haying, harvesting and threshing equipment.

PUBLICATIONS AND STATISTICS

Twenty-two new bulletins, circulars and leaflets were published in 1941 and three were reprinted, representing a total of 138,500 publications dealing with agriculture and home economics. In addition to these publications, 37,000 plans for farm buildings and appliances were prepared.

The new publications were the following:

- Bulletin 35—Beekeeping for Beginners in Alberta.
- Leaflet 36—Disorders of the Cloaca and Vent.
- Leaflet 37—Fowl Paralysis and Leukemia.
- Leaflet 38—Construction of Sod Poultry House.
- Leaflet 39—Production of Quality Market Eggs.
- Circular 40—Flax Production in Alberta.
- Circular 41—Grain Mites.
- Circular 42—Control of Garden Pests in Alberta.
- Leaflet 43—Hoary Cress.
- Leaflet 44—Leafy Spurge.
- Leaflet 45—Quack Grass.
- Leaflet 46—Wild Mustard.
- Leaflet 47—Wild Oats.
- Leaflet 48—Canada Thistle.
- Leaflet 49—Field Bindweed.
- Leaflet 50—Sow Thistle.
- Leaflet 51—Toad Flax.
- Leaflet 52—Night Flowering Catchfly.
- Bulletin 53—Dressing and Curing Pork on the Farm.
- Leaflet 54—Poultry Catching Crate.
- Bulletin 55—Dairy Herd: Care and Management.
- Joint Leaflet 1—Wheat for Swine in Alberta.

The Annual Report of the Department of Agriculture was issued as usual, and in November a badly needed Statistical Report was released.

The Department of Agriculture Notes were prepared weekly throughout the year, and it is noted that their use in local and farm papers has been extended.

Ten crop reports were released during the season, and in October an Autumn Survey of Agriculture was prepared.

The Farm Club Bulletin was published quarterly in the interests of the Junior Clubs.

Numerous mimeographs on special topics pertaining to Agriculture and Home Economics were prepared. Included in these was a mimeograph on the Principal Grain Crops of Alberta.

A co-operative arrangement was entered into with the University of Alberta for the preparation of joint publications. A Publication Committee was set up, and the first publication in this series, "Wheat for Swine in Alberta," was issued in November.

Individual requests for information have been numerous. Approximately 7,000 letters were received asking for publications or other information. It is estimated that a total of approximately 115,000 publications and plans were distributed during the year.

Arrangements for the collection of agricultural statistics were continued with the Dominion Bureau of Statistics. These statistical data are used by the Department in the preparation of reports of various kinds for local use. In January a Statistical Summary of Production was released, and in November an Agricultural Statistical Report was prepared.

Changes in agriculture as a result of the war have increased the demand for accurate statistical information, and the data to be obtained from the 1941 census will be of much value in supplying these needs.

RADIO

Officials of the Department of Agriculture contributed to the Farm Forum Programme and conducted the Junior Farm Forum over CKUA during the year. On the Farm Forum Programme 19 talks were given by Department officials, while 30 broadcasts were arranged on the Junior Farm Forum, being a total of 49 radio talks. The fall programme of the Junior Farm Forum was increased from 15 minutes to half-an-hour, and the time was changed from 1:15 p.m. on Thursday to 11:30 a.m. Saturday.

A limited use was also made of the radio for broadcasting special notices and information. Sixteen spot announcements were prepared by the Extension Service and broadcast over several stations.

The Department was also associated with the Alberta Federation of Agriculture and the University of Alberta in the organization of listening groups for the Farm Radio Forum broadcasts.

VISUAL INSTRUCTION

Greater use of the visual instruction equipment was noted in 1941. It was used at meetings, short courses, field days and at the Agricultural Schools. Some officials of the Department use visual aids on every possible occasion.

Visual instruction is generally recognized as a sound method of passing along information, and many agricultural subjects readily lend themselves to pictorial representation. Rural people as a rule are not heavy readers and their active life is not conducive to developing the ability to sit for hours to listen to talks and lectures. Hence, the film, film strip, etc., is much appreciated and valuable in imparting new ideas.

There is need of more assistance to prepare suitable material. Although many useful films, etc., are obtainable from the United States, they are not altogether suitable for local conditions.

During the year 13 sound films were purchased for the film library, two tri-way projectors were also added to the equipment, and one old 16 mm. projector was replaced with a new one. Nine film strips were obtained from the United States Department of Agriculture and five strips were prepared by the Branch.

SHORT COURSES

Short courses and agricultural meetings continued to be popular Extension activities during the year. The Agricultural Extension Service assisted with the organization of 103 short courses and agricultural meetings, of which 10 were of two days duration. Attendance at the meetings varied from about 12 to nearly 700 at Calgary, the largest short course held. Average attendance has been estimated at 68 persons. In addition to these meetings, the District Agriculturists and other fieldmen held many small gatherings. Nearly all short courses are held during the months of January, February and March.

This form of Extension activity allows farmers to come together to hear talks on agricultural subjects, and gives them an opportunity to discuss their problems with specialists and among themselves. The demands placed on agriculture by the war created a number of new problems on which farmers sought further information. The agricultural meeting and short course, however, does not attract a sufficiently large number of farmers. If more assistance were available to prepare interesting charts, demonstrations and other visual aids, the value of this work would be greatly enhanced both in its effectiveness and in the number of persons attending.

FIELD DAYS

A total of 85 field days were held by the Department of Agriculture during the year, at which the attendance was estimated to be 8,970, or an average at each of 105. In addition to these field days, a considerable number were organized by the Dominion Department of Agriculture, the Crop Testing Plan, the North-West Line Elevators Association, and other organizations.

Field days are meetings held on a farm or at some public institution where the live stock, crops, poultry, etc., may be used for demonstration purposes. This type of meeting, which combines talks and demonstrations, is both interesting and instructive; many field days close with a picnic supper. District Agriculturists, in co-operation with local organizations, are responsible for organizing most field days.

Farm and Home Week was the most important event in the field day activities during the year. It was a series of five field days held for the third consecutive year at the School of Agriculture at Olds during the last week in June. Total attendance in 1941 was about 1,300, including 50 leaders of the Junior Live Stock Clubs, who remained for the full period.

The programme at Farm and Home Week was planned to be practical, and was divided into both men's and women's sections. The facilities of the School of Agriculture, including the live stock, crops, garden, shops, home economics demonstration kitchen and classrooms were all available for this event.

Authorities in their respective fields provided the instruction, and prominent speakers were invited to take part in the general

programme. Among those who participated in 1941 were: Hon. Wm. Aberhart, Premier of Alberta; Hon. D. B. McMillan, Minister of Agriculture; Hon. J. G. Taggart, Minister of Agriculture of Saskatchewan and Chairman of the Canadian Bacon Board; and Dr. J. C. Berry of the Department of Animal Husbandry, University of British Columbia. Members of the staff of the University of Alberta, officials of the Dominion Department of Agriculture, officers of the Department of Agriculture and Olds School, and others, also took part in the proceedings. To all of these the appreciation of the Department is extended for their assistance.

Farm engineering field days were continued, and proved very popular. At 31 field days farm engineering was discussed. Horticultural field days to demonstrate farmstead planning, tree planting and orchard practices were also held. Lack of staff to attend such field days reduced the number held in 1941.

There was a demand for lady speakers at many field days. Lady members of the Extension Service staff attended 21 field days to speak to the ladies.

As an accepted form of summer extension work, field days are very valuable. Their usefulness could be improved through the use of more equipment, such as a truck to carry a tent, public address system and sound films, and other visual aids to every field day.

SCHOOL FAIRS

School fairs were discontinued, as an economy measure, in 1941. Although the Department withdrew its support, about eight centres carried on and held their fairs in the fall.

As the Department had an obligation to the school fair winners of 1940, the usual school fair short courses were held. Both of these courses were held at Olds, as the Vermilion School was closed in the spring. Attendance at the Olds School Fair Short Course was approximately 100, while there were about 70 scholarship winners from the Vermilion district.

AGRICULTURAL FAIRS

There was a reduction in the number of fairs held in 1941. This was due in part to war-time conditions and partly because of poor crops in some areas.

The Class "A" fairs at Calgary and Edmonton enjoyed a satisfactory season. Due to the Edmonton Exhibition Grounds being leased by the Department of National Defense, there were no live stock exhibits at the Edmonton Fair.

Four Class "B" fairs were held at Red Deer, Vegreville, Vermilion and Lloydminster.

Twelve Class "C" fairs were held at Benalto, Didsbury, Falher, Fort Vermilion, Goose Creek, Lacombe, Lousana, Olds, Priddis, St. Paul, Westlock and Wildwood.

The general interest at the fairs was not as good as in the previous years. The Lacombe Fair extended its programme by bringing in much of the Class "A" fairs live stock from Calgary. This was done during the week between the Calgary and Saskatoon Exhibitions, when the stock was idle due to the cancellation of the Edmonton Live Stock Show.

The Department continued its assistance to the fairs during 1941 by paying certain grants and providing judges for the Class "B" and

"C" fairs. In the case of Class "C" fairs, the grant paid was based on the amount of prize money expended, with the exception of Lacombe, Westlock, St. Paul, Fort Vermilion and Wildwood. In the case of Lacombe, a special grant was paid to assist in bringing the Class "A" fair stock to the fair; the Westlock Fair was rained out, and the St. Paul, Vermilion and Wildwood fairs were given straight grants due to their being recently organized.

Agricultural fairs are in a difficult position. Their value is questioned under present conditions, but even in normal times the agricultural fair is not what it used to be. The whole fair structure requires a thorough check-up with a view to its reorganization to suit present day trends. Although such plans must be delayed, all those connected with fairs should keep in mind the need for action respecting these matters and the development of a long time fair programme.

It is unfortunate that more agricultural societies do not carry on other activities in addition to the fair. With the multitude of problems facing agriculture, the agricultural society is in a most important position to render greater service. The improvement of agricultural practices and rural living is a continuous challenge.

WOMEN'S EXTENSION

Extension work for women and girls is conducted by the Department of Agriculture, and may be divided into sections, as follows: demonstrations, correspondence courses, girls' clubs, publications and miscellaneous. A brief review of each is given herewith.

Demonstrations.

In 1941, 242 demonstrations were held with an attendance of 6,292 women, or an average attendance of 26. In 1940, 282 demonstrations were held with an attendance of 7,235, or an average of 25.

The apparent decrease in the number of demonstrations was due to the fact that in 1941 only four demonstrators were in the field, as compared to six demonstrators in 1940. The comparative increase in demonstrations given may be credited to the greater demand for this work and the improved system of having each demonstrator work in an assigned area as tested last year. There are still a number of requests for these demonstrations to be filled.

The lectures and demonstrations were given on topics of vital interest to rural women, and were planned to impart information the housewife may put into practice to further our war effort.

Correspondence Courses.

Winter study courses are offered women's organizations on the following subjects: "Foods, Nutrition and Health," "How to Buy," "Rug Making" and "New Furnishings for Old." In all, 230 groups composed of 4,200 women are taking one of these courses. The value and interest in these courses is shown by the fact that 90 groups are repeaters, having taken a course last winter.

During January and February a demonstrator held meetings at 18 central points where leaders from several local groups taking the courses gathered to receive instruction and ideas for the conduct of the course.

Girls' Work.

This Department has long recognized the need of some home economics instruction for 'teen age girls in rural areas, and has expanded its programme in this respect as far as the present limited staff and funds will allow. The Department is now in contact with 90 girls' clubs, of which 40 are Women's Institute girls' clubs, 40 are clubs organized under the Department, and 10 are garden clubs sponsored in co-operation with the Alberta Wheat Pool.

Lesson material and supervision is supplied to all of these clubs. The projects are being planned in progression and with some continuity of subject matter from term to term. A convention for the Women's Institute girls' clubs was held at the Olds School of Agriculture in the summer. There was also a Leader's Short Course held at Olds for the leaders of the 10 girls' garden clubs.

Publications.

No new bulletins have been published, but leaflets on 22 topics have been mimeographed for use in answering the many inquiries for information and for demonstrations.

Miscellaneous.

An important section of the programme for field days held during the summer months is that of the rural women's. In 1941 a lady speaker was provided at 21 field days to speak to the women on some timely home economics subject.

Special short courses were given to women attending Farm and Home Week and Farm Women's Week at the Olds School of Agriculture held in June and July. The attendance at these demonstrations and lectures varied from 50 to 145 women.

This Branch also gives instruction to women at fairs judged by a member of the staff, at other meetings such as conferences and conventions of various organizations, and through radio talks.

There are many problems facing extension work for women. Chiefly it is the lack of sufficient assistance and funds to meet the growing demands for this work. There is still the problem of transportation to rural points. The use of an automobile would make it possible to reach more groups and those in out-of-the-way places. It is hoped that leader's short courses may be held in order to train the leaders so that they may return to their respective groups with ideas and additional information for their study programme. This plan would be of particular value in the case of girls' clubs.

Still retaining the basic objective in women's extension work of "Better home living on the farm," the programme this year was planned to be particularly valuable to the housewife in adjusting her home activities to the need for war-time economy and in strengthening her contribution to national defense by doing the most expert job of homemaking possible. Homes that are peaceful havens from the turmoil in the world—that give security to the family circle—that build up the health and vigour of the family group, will be our nation's first line of defense.

Some figures concerning the 1941 programme are given here-with:

	1941	1940
1. Number of lecture-demonstrations given	242	282
2. Total attendance (estimated)	6,292	7,235
3. Average attendance	26	25.6
4. Short Courses and Field Days attended	24	44
5. Judges for Fairs	13	15
6. Girls' Clubs taking courses	90	49
7. Applications for women's correspondence courses	230	250
8. Number of women enrolled	4,200	4,411

EXTENSION BRANCH SUMMARY

	1938	1939	1940	1941
Publications Issued		12	22	22
Publications Distributed (estimated)	8,000	20,000	65,000	115,000
Radio Talks Delivered		44	54	49
Short Courses and Meetings:				
Number held	14	59	105	103
Estimated attendance	800	4,130	6,930	7,000
Average attendance	57	70	66	68
Field Days:				
Number held	93	74	77	85
Estimated attendance		10,360	9,240	8,970
Average attendance		140	120	105
Women's Extension:				
Lecture-demonstrations given	129	263	282	242
Estimated total attendance	2,770	6,838	7,235	6,292
Average attendance	21	26	25	26
Correspondence Courses:				
Groups enrolled		244	250	230
Women enrolled		4,371	4,411	4,200
Agricultural Fairs:				
Class "A"	2	2	2	2
Class "B"	6	6	5	4
Class "C"	11	13	14	12

REPORT OF THE DISTRICT AGRICULTURIST SERVICE

(J. R. SWEENEY)

The services performed by the District Agriculturists receive wider recognition each year, and there is a growing demand for an increase in the number of permanent offices located throughout the Province.

The activities of the District Agriculturist cover a wide range of subjects and reach an increasing number of farm people. The results of the Junior Club programme alone would justify the maintenance of District Agriculturists in every rural area in the Province. These technically trained men assist the farmer in solving many of his production problems, and in general, the District Agriculturist carries helpful agricultural policies to many farmers who do not attend meetings where agricultural information is distributed. The very nature of the work requires that a District Agriculturist must be well-informed on almost every phase of agriculture, and have particular training for the problems peculiar to the district in which he is located.

Each agriculturist is obliged to serve a very large territory, and the distance travelled from point to point within the territory requires much valuable time. As soon as conditions permit, it is agreed that an increase in the number of district offices will help to provide a valuable service in a number of sections of the Province which are at present not served by a District Agriculturist.

Permanent offices are located at Lethbridge, Brooks, Calgary, Olds, Red Deer, Stettler, Thorsby, Camrose, Vermilion, West Edmonton, Willingdon, Smoky Lake, Westlock, St. Paul, McLennan and Grande Prairie. Temporary offices are located at Athabasca and Berwyn.

A full report of each district is submitted to this office, a summary of which is included in this report.

LETHBRIDGE

(S. S. Graham)

Precipitation was above the average at Lethbridge in 1941. Grasshopper damage was light and confined to local areas. Losses due to wheat stem sawfly were heavy especially on land farmed in strips or stubbled in. On the whole, crop yields were satisfactory, but quality was low owing to incessant rain at harvest time.

There were 23,908 acres seeded to sugar beets in 1941. A total yield of 297,287 tons of beets, or an average of 12.8 tons per acre, was harvested. The quality of sugar content of the crop was good. The production of sugar beet seed will be attempted next year.

Minor crops are the source of considerable revenue to irrigation farmers. The most important are soy beans, peas, beans, mustard, corn, etc. Approximately 3,500 acres of land are devoted to the production of vegetables for processing in canning factories located at Taber and Lethbridge. The seed pea and bean industry shows expansion. At Picture Butte, 50 acres of fibre flax was produced this year. The fibre therefrom was purchased by furniture manufacturers, and the seed is valuable.

Ring rot in potatoes appears to spread, but the cleaning up of the disease by growers using certified seed would indicate that the pest could be stamped out by concerted action. The enforcement of potato grading regulations begun this year will encourage the production of a superior product.

The farm bad weeds, hoary cress, leafy spurge, field bindweed and Russian knapweed, constitute a major weed problem.

The live stock situation is good. There is a big increase in small farm dairy herds, and good quality dairy stock are in great demand. Interest in breeding stock of all kinds is keen, and every assistance to secure animals is given by this office.

About 20,000 cattle and 50,000 sheep are on feed in the district. Feeder associations are active.

Equipment has been ordered to double the capacity of the cheese factory at Glenwood.

Eleven junior clubs are supervised from this office.

BROOKS

(M. L. Freng)

Extremely dry, hot weather in July reduced yields in this district even on irrigated lands. Poor yields were harvested, therefore, and wet weather in September reduced the quality. Returns to farmers would have been very low but for good live stock prices. Fortunately, hog marketings throughout the district have increased substantially. Wheat acreage was reduced about 50%, while acreage devoted to oats, barley and summerfallow increased.

The main forage crop on the irrigated lands is alfalfa, and a good deal of alfalfa seed is produced. More mixed pastures are being seeded yearly.

Seed peas are produced very satisfactorily. Potatoes are grown in limited quantity. Field corn does very well, and more should be grown to be utilized by lambs and hogs. A few plots of soy beans matured well in 1941. Thomas Brown of Cassils won first prize for this crop at the Chicago International this year.

Canada Thistle, perennial sow thistle, wild oats and wild millet are a problem on most irrigated farms. Russian knapweed, hoary cross and leafy spurge are also appearing in the district. The control of weeds on some lands is now a problem in reclamation, and farmers cannot afford the cost of reclaiming land on which annual water rates must be paid.

Only at Eyremore was grasshopper bait spread this season. Potato bugs and other insect pests were not more harmful than usual.

Live stock entered the winter in excellent condition, and feed supplies are good.

Three feeder associations are in operation. Approximately 3,000 lambs and 1,800 cattle were in feed lots at the end of the year. There is a strong demand for breeding stock. Interest in dairying is improving, and six dairy bulls were placed in the area.

Junior activities consisted of one wheat club, one potato club, one baby beef club, and five girls' garden clubs.

CALGARY

(B. J. Whitbread)

Crops in this district, especially coarse grains, were light. Wheat yields in most of the area to the east and south were under 12 bushels, and bonuses were received under the Prairie Farm Assistance Act. However, any form of feed relief will be unnecessary.

There is a tendency to diversify cropping systems in this area. Wheat is the major crop. An interest is developing in flax production, which will continue if present prices hold. There is little increase in acreage devoted to forage crops. Native pastures and cover crops in the summer and fall season, with straw and oat hay in the winter, are the feeds depended upon for live stock.

Little progress has been made in the eradication of weeds. Interest continues in such persistent weeds as hoary cress, leafy spurge, Russian knapweed and field bindweed. The common weeds would seem to be controlled effectively.

Grasshoppers were slightly more in evidence this year than in 1940. This pest did more damage at harvest time than in the spring. Damage by sawfly increased sharply; some stubble land was very badly infested. There is a wide interest among farmers in methods of control, and it is planned to hold farm meetings to discuss the problem.

Interest in horses is very low. The numbers of beef cattle continue to increase. Dairy heifer calves are scarcely obtainable, all being raised to maturity by dairymen. Sheep breeders are increasing the size of their flocks, but few new men are entering the business. Increases in hog production are planned wherever shortage of coarse grains has not forced curtailment.

Large numbers of applications for bulls and boars were received at this office and forwarded for attention.

Fluid milk and cream shippers are concentrated in the area close to Calgary. Numerous attempts to interest dairymen in cow-testing services have failed. Outside the Calgary area, cream shipping is not a general farm practice.

Considerable attention was given junior grain and live stock club activities throughout the year.

OLDS

(Hugh McPhail)

Wheat acreage was sharply reduced in the Olds district in 1941. Hog marketings were higher and the output of dairy products increased.

A larger acreage was seeded to forage crops than ever before. For forage purposes brome and alfalfa are most popular, but considerable timothy, alsike and Altaswede are grown. Creeping red fescue seed is very successfully produced in the Olds district. Efforts are being made to promote the production of legume seeds on the wooded soils in the Sundre area.

Wild oats, Canada thistle, mustard and quack grass are the most troublesome and difficult weeds farmers in the district have to contend with.

Little damage occurred from cutworms and wireworms this year. Considerable damage was caused by wheat stem sawfly in the eastern part of the district.

With the exception of horses, all classes of breeding stock are in keen demand, and a number of pure-bred sires were placed by this office.

Much time was spent in promoting the dairy industry. The Linden Cheese Factory led the west in cheese production in 1941.

The Olds Feeder Association is carrying on, but the number of live stock on feed is probably reduced as compared with last winter.

The efforts of the Olds Agricultural Society to assist its members to secure forage crop seed, warble fly powder, etc., were encouraged and helped.

Greater interest was shown this year in the blood-testing of poultry, and the number of farmers keeping a few hives of bees increased.

The usual junior activities were carried to successful conclusion. A new feature this year was the organization of five girls' garden clubs, in which this office assisted.

RED DEER

(J. E. Price)

Crop conditions varied, but were lighter than average over most of the district. Hay was short, but owing to the mildness of the winter to date, feed supplies would seem to be adequate.

The production of swine is increased on practically every farm. Interest in securing good breeding stock is keen and supplies are kept continually low. About 75 gilts were selected by this office, and there is a general demand for information on swine diseases. There is a good demand for pure-bred cattle, and an unusual interest in the founding of pure-bred herds.

The number of cattle on feed is about one-half that of last year. Shorter supplies of coarse grains, increases in swine production, a shortage of labour and the price of feeders are reasons given for partially-filled feed lots.

The importance of the dairy industry in this district goes without saying. It is gratifying to note that there is a healthy demand for good quality milking stock with which to improve dairy herds.

Junior club activities were extended in 1941, but the programme was interfered with somewhat owing to the occurrence of infantile paralysis.

The continuity of service in the Red Deer district has been broken by the enlistment of two District Agriculturists from this office.

STETTLE

(A. J. Charnetski)

In 1941 field crop yields varied between 40 to 90 per cent. of average, being progressively poorer in an eastward direction. Range cattle went into winter much thinner than a year ago. Fortunately, a mild fall permitted a long period of stubble foraging and reduced the danger of serious feed shortage.

Weeds are a serious problem in this district. Wild oats, Canada thistle and perennial sow thistle are most troublesome. It is still

possible to keep all patches of hoary cress, Russian knapweed and field bindweed under close observation. Generally speaking, municipalities do not give sufficient attention to the enforcement of weed legislation.

This year, 18,899 pounds of seed were distributed by municipal districts under the Forage Crop Encouragement Policy. The need for weed control is important, and observations made would indicate that weeds can be controlled by forage crops when the same are properly managed.

Sawfly did considerable damage where strip farming is practised, and many large fields were severely infested in the eastern part of the district.

Owing to an increase in the beef cattle population, most available pastures are now utilized. The Bull Exchange Policy is very popular; 55 bulls were placed by this office during the year. The local horse market is negligible, good, sound horses weighing 1,400 pounds bringing well under \$50.00. The thriving swine industry is dependent to quite an extent on wheat for feed. Dairying is important, but not a major phase of farm enterprise.

The Drumheller Junior Grain Club won the Standing Grain and General Efficiency championship for the Province. Willoughby Cole and Calvin McGhee of that club won second in the National Grain Judging Competition at Toronto; and the former won a certificate of merit at this event for the highest score obtained in the contest.

THORSBY

(J. E. Birdsall)

In 1941 the acreage sown to wheat was reduced 15% to 20%, while forage crop and coarse grain acreages increased. Swine and the production of dairy and poultry products showed marked increases.

Drought in the spring and early summer resulted in short pastures, and feed this winter is not over-abundant. Yields of coarse grains were low and wheat is being fed on almost every farm, principally to pigs. The number of cattle on feed this winter is not large.

Increased swine production has resulted in considerable sickness and disease. Most of the difficulty, however, is traceable to overcrowding and improper feeding and management. With the assistance of the Provincial Animal Pathologist, a heavy demand for information on swine production problems was satisfactorily met.

Dairying is important in the eastern part of the territory. There are five creameries and two cheese factories operating in the district.

Poultry keeping increased and flocks were improved through the purchase of day-old chicks. Poultry raisers are eager for information on better feeding and management practices, and this office took advantage of the opportunity offered for rendering service.

In the spring 19,988 pounds of seed were distributed through Forage Crop Encouragement Policies. In all, 460 farmers received an average of 43.3 pounds of seed. On the black soils, alfalfa and brome constitute the principal forage grown. In the grey wooded soil area altaswede red clover is most popular, but alfalfa is rapidly gaining recognition. In the latter area the production of legume

seeds is an important enterprise. About 50,000 pounds of forage seed will be handled by the Growers' Association, with headquarters at Warburg. Harvesting is still a problem in the production of this crop.

Tartary buckwheat is becoming a commonplace weed, and wild oats were bad in 1941.

Junior club work has been continued from this office.

CAMROSE

(J. L. Kerns)

Crops in 1941 were most discouraging, especially with respect to coarse grains. Since the latter were seeded in place of wheat to a large extent, the situation was accentuated.

A wide variety of forage crops is now grown in the district. However, alfalfa, brome and crested wheat lead all other kinds. The production of grass seeds is growing in importance.

Couch grass, Canada thistle, and wild oats are the most troublesome weeds. Perennial sow thistle is distributed from lake shores. Russian thistle and tumbling mustard are a pest in the eastern part of the area. Tartary buckweed is common north-west of Camrose. The four new pernicious perennials are all reported.

Sawfly damage did not show up seriously because of extremely short crops in the area affected.

Live stock entered the winter thin, and feed supplies are very short. Considerable wheat is being fed, especially to swine. The winter feeding of cattle is much reduced.

A large number of pure-bred cattle breeders are situated in this district. Present prices are resulting in the expansion of this effort. The dairy industry is not much more than holding its own, except around Camrose, where a definite increase has taken place. Production records in 18 dairy herds are now kept.

There are about 50 farmers in the area with sheep. Rapid expansion in the production of swine was arrested by feed shortages. Many farmers have reduced the number of sows bred for spring farrowing. The uncertain state of the horse market did not appreciably affect breeding plans for this year.

Interest in securing good sires of all classes of stock improved in the year just ended.

Poultry raisers at Daysland, Strome and Killam ship eggs for hatching. They report a good year.

Junior club work is limited owing to pressure of other work. However, the programme has been carried on at about the same level as in former years.

EDMONTON-EDSON

(N. N. Bentley)

Field crops were subjected to particularly adverse weather conditions during the season. Early drought, heavy summer rains and incessant precipitation during harvest, all caused loss in the yield and quality of crops.

In the grey wooded soil areas, forage crops are assuming a major role in the cropping programme. The production of alfalfa,

altaswede clover and alsike clover seed is developing rapidly. Seed growers' associations with considerable memberships are active at Cherhill and Sangudo. Each operates a seed cleaning plant and conducts a marketing service. The preparation of seed for market at these central plants is advantageous in that it ensures the marketing of a uniformly high quality product.

Swine production is the principal live stock enterprise, but lower grain yields in 1941 and higher feed costs will arrest further expansion. There is interest, however, in securing better breeding stock.

In the cattle industry, frequent crossing of dairy and beef breeds and the use of scrub bulls precludes the production of quality for either purpose. Better sires, a more consistent breeding programme and better feeding practises are greatly needed. A shortage of winter feed has in the past militated against the development of cattle production on a sound basis. The inclusion of this class of live stock in farm programmes must necessarily depend, therefore, on the production of forage crops. The need for simultaneous effort on these matters is recognized by this office, and our work is planned accordingly.

Considerable attention was given to the organization and supervision of Junior Clubs. The beef cattle judging team representing the North Edmonton Junior Club won the National Beef Cattle Judging championship at Toronto this year.

VERMILION

(D. A. Andrew)

Crops in this district were very poor south of a line running east and west through Vermilion. In this area a serious shortage of feed might have resulted had we not been favoured with a mild, open fall.

The south-eastern part of the district suffered considerable loss from sawfly. Spruce webworm did some damage to ornamental spruce trees. Rust damage was extensive but light.

Wheat is and will continue to be the main crop grown. The chief effect of the Dominion wheat policy this year was to increase the amount of land devoted to summerfallow. Along the C.P.R. line to the north considerable oats are grown, but little barley. The practice of growing mixed wheat and oats for feed is increasing steadily, and the yield was so good in 1941 that the sowings of mixtures may be expected to increase next year.

Considerable effort is made to increase the production of forage crops, and with some success. Six municipalities are co-operating with the Department to provide limited quantities of seed to farmers at half-price. Farmers are becoming interested in the technique of seeding forage crops, and interest in the management of established stands will follow. Alfalfa crested wheat and brome are most popular. Sweet clover is not grown extensively. Little forage crop seed is produced in the district.

The majority of cattle are of the beef type, but the number winter fed this year are reduced because of feed shortage. There has been an increase of about 20% in butterfat marketed. Vegreville is the chief dairy centre. A few new flocks of sheep were established during the year. The breeders of pure-bred sheep have been encouraged by a good demand for breeding stock at high

prices. The various sire policies are made good use of in this district.

Junior club activities embrace grain, live stock and forage crop projects.

WESTLOCK

(E. G. Wood)

Owing to the importance of wheat growing in this area, financial returns for the 1941 crop were discouraging. Farmers are now giving more attention to the production of live stock. Large acreages of forage crops are being utilized for pasture and winter feed. There is every reason to believe a further reduction in wheat acreage will take place during the coming year and that live stock will be increased.

Two seed cleaning plants are now operating within the district, and many farmers are availing themselves of these facilities. This office has devoted considerable effort along the line of forage crop production, and particularly the development of the forage seed industry. Under the Forage Crop Distribution Policy upwards of 9,500 pounds of forage seed were distributed to farmers in this district last spring. One lot of 1,500 pounds of Registered Grimm Alfalfa was placed in an area where this crop had not been previously grown. The estimated production of forage crop seed in the district is as follows: Alfalfa, 50,000 lbs.; Altaswede Clover, 20,000 lbs.; Alsike Clover, 25,000 lbs.; Timothy, 30,000 lbs.; Sweet Clover, 50,000 lbs.

Forage crops are playing an important part in the control of weeds, and may eventually replace the summerfallow method to a considerable degree. Perennial Sow Thistle and Wild Oats are the two dominant weeds found in this district.

The expansion in hog-raising in this district is quite outstanding, and has practically reached the point where further expansion is doubtful for the coming year.

Higher prices have stimulated the production of beef cattle, while horse-raising appears to be on the downward trend. Dairying shows a marked upturn, and there is a growing interest in the bee industry in this area. There are upwards of 150 beekeepers in the district tributary to Westlock, and consideration is being given to the establishment of a honey processing plant.

The supervision of junior activities requires a great deal of time, and the number of clubs is increasing.

WILLINGDON

(F. Magera)

Unusually hot weather in July and bad harvest weather reduced the yield and quality of crops in the district. Coarse grains suffered most, and shortage of feed will likely prevent further expansion in the swine industry until another crop is harvested. However, a decrease in the number of sows bred is not expected.

The production of swine has become a major farm enterprise, and much time is spent in assisting farmers to secure good breeding stock to improve feeding and management practices. A start has been made in the organization of Sow Distribution Groups, which will be supplied with sows through a co-operative live stock shipping association.

Despite poor prospects for a market, interest in horse breeding is good. Two stallion clubs were formed in 1941, to make a total of 17 in the district. There are some 30 breeders of pure-bred horses. Some 200 entries were exhibited before an attendance of 700 at the Willingdon Horse Show. Six colt shows were held at divers points.

Improvement continues in the class of beef and dairy cattle kept, but much is yet to be done. The average production of dairy cows is deplorably low. Too many of the beef cattle kept are not ready finishers and are placed on the market without feeding.

Sheep raising is conducted by only a few who wish wool for home weaving. Interest in poultry raising is improving. There are about 200 small beekeepers in the district.

Members of junior grain clubs under supervision from this office won 50% of Alberta winnings at the Chicago International in 1941. Included were the Oats Championship and the Reserve Championship in Barley.

More forage crops are seeded in this district now than formerly. The tiller-type machine is proving to be effective in the control of quack grass. Better control of wild oats is observed.

SMOKY LAKE

(W. N. Pidruchney)

Grain yields varied greatly from farm to farm this year; fall precipitation reduced quality. Coarse grains suffered most. Tartary buckwheat is becoming a serious weed.

The production of barley for feed is increasing, and there is a strong tendency toward smooth-awned varieties. All classes of seed have been improved through junior clubs. The arrangement to make field inspected seed available at local elevators assisted to promote the use of better seed.

The Forage Crop Policy has provided a basis on which to carry on education regarding the seeding and management of pasture and hay crops. So far little seed is produced. Most municipal districts in this area have completed their agreements to help distribute forage seeds at half-price.

Swine production is the major live stock enterprise. Considerable time is devoted to education regarding proper rations and sanitary housing for swine. The various sire improvement policies administered through this office have greatly assisted to improve quality marketings.

Several farmers interested in establishing pure-bred cattle herds were advised during the year. Shorthorns, Red Polls and Herefords are the breeds favoured.

Butterfat deliveries to creameries in the district increased 30% over a year ago. The first dairy club calves brought into the Smoky Lake district are now in production and greatly appreciated. As a result, the demand for good calves from dairy stock has increased.

Following the practice of bring in day-old chicks, poultry flocks are rapidly improving. There is also considerable demand for graded turkey stock.

The number of beekeepers in the district has increased in the last few years.

The usual junior club activities were continued, and this office assisted in organizing six girls' clubs. The Championship for Barley at the Chicago International Hay and Grain Show was awarded to a junior club member from this district.

ST. PAUL

(J. M. Fontaine)

Hot weather in July depreciated early prospects for a bumper crop and unfavourable weather lowered the quality of grains. The hay crop was normal in both quantity and quality.

Considerable new land was cleared and brought under cultivation during the year. At the same time, seeding down to tame grasses and legumes was undertaken more extensively. The numbers of live stock kept on farms are increasing, with proportional increases in acreages devoted to the production of coarse grains and forage crops.

More than 10,000 pounds of forage seeds were distributed at half-price to farmers in this district under the Forage Crop Encouragement Policy. This office does everything possible to promote production of this class of crop. The need for forage crops to control weeds and soil erosion increases each year, and the cattle and sheep industry is dependent to a large extent upon their development.

Over 75,000 pounds of alfalfa seed was exported from this area in 1941. A Grimm Alfalfa Seed Growers' Association has been formed at Holyoke and plans to establish a seed cleaning plant are currently under way.

The most serious weeds reported are perennial sow thistle, Canada thistle, quack grass and tartary buckwheat. There is need for a more vigorous weed control campaign on the part of municipalities.

During the last five years the numbers of swine on farms have more than doubled, and select and bacon gradings increased from 60% to 79%. The Department's breed improvement policies, which were continued in 1941, are thus reaping good returns.

The quality of cattle improves slowly. This year 30 pure-bred sires were placed. Five stallion clubs were organized by this office. Encephalomyelitis destroyed about 50 horses in the summer.

Cockerel exchange among farmers is still the rule here, and we are unable to make progress in the promotion of better flocks of poultry.

The usual programme in junior club activities is continuing.

GRANDE PRAIRIE

(W. Scarth)

At the commencement of harvest a normal grain crop for the district seemed assured; but continuous heavy rains and snow fell between August 22nd and October 12th, which lowered the quality of all grains. Most of the wheat delivered to elevators graded No. 4 Northern. Oats and barley sprouted badly, and a good deal of these grains was completely spoiled.

The supply of low-quality grain resulted in the feeding of more cattle. It is estimated that there are 60% more in feed lots now

than at the same time last year. Expansion has marked the dairy industry also, local creameries showing a 25% increase in the production of butter for the year.

The production of forage crops increased appreciably in 1941. More legumes are grown now than formerly, and 447 bottles of nitroculture were handled through this office. The Forage Crop Encouragement Policy was implemented through 12 forage seed associations. The following seeds were distributed to their members at half-price: Brome, 4,100 lbs.; alfalfa, 3,400 lbs.; crested wheat grass, 1,500 lbs.; alsike clover, 1,000 lbs.; and Altaswede red clover, 600 lbs.

The acreage devoted to the production of seed crops in this district is large. About 6,000 acres were inspected and passed as eligible for the production of registered or certified seed.

The itinerant seed cleaners which have operated in this district for many years have done much to establish a fine record for quality on the part of local seed growers. The addition a year ago of a central cleaning plant at Grande Prairie will do much to hold high the standard of quality, especially of forage seeds prepared for export.

It is natural that a farm community so dependent on seed production should be interested in the suppression of weeds. This office lends all assistance possible to the campaign against weeds. Unfortunately hoary cress is now found to be widespread from east of Grande Prairie to the Buffalo Lake district.

This office assisted in the placement on purchase of the following classes of pure-bred sires: 4 dairy bulls, 25 beef bulls, 43 boars, and 20 rams. Eight swine improvement associations were organized, and members assisted to purchase 205 head of female breeding stock. A boar was placed with each association.

Progress was made in improvement of poultry flocks through culling. There are now 52 beekeepers in this district.

Considerable attention was given to supervision of junior club work throughout the year.

McLENNAN

(E. Hebert)

In the area served by this office there is a definite trend toward mixed farming.

The percentage of crop land seeded to coarse grains increased materially this year, and the production of swine is up proportionately. The quality of pigs marketed is good.

An interest in sheep raising is evident and improvement in dairying is noted.

The number of cattle in feed lots this winter is increased over last year. Two carloads of feeders were shipped from Edmonton to Donnelly for finishing.

There is much room for the improvement of live stock in the district, and good work is being done under the sire policies offered through this office. However, the lack of good water in many districts militates against this industry, and especially dairying.

A total of 7,550 pounds of forage crop seed was distributed to farmers at half-price in the spring of 1941. Specific kinds and

quantities were: Alfalfa, 5,050 lbs.; brome, 1,000 lbs.; alsike clover, 400 lbs.; Altaswede clover, 600 lbs.; timothy, 400 lbs.; and redtop, 100 lbs.

Little field inspected crop seed is grown in this district. There is need for better adaptation of varieties and improvement in the quality of seed sown. Smut is still common in the district owing to the improper treatment of seed grain. The lack of good seed cleaning facilities, aggravates the weed problem. Moreover, many summerfallows are not cultivated until after a full crop of weeds have matured.

It is noted that junior club work results in improved quality in agricultural production generally.

ATHABASCA

(G. G. Golberg)

A Department office was opened in Athabasca for the 1941 summer period. At the commencement, the services which are offered through a District Agriculturist were little understood in the area. Consequently, the work this year was of a general and introductory nature. However, some progress is reported.

Crop yields were reduced owing to rapid ripening in hot weather. Feed supplies are scarce in some localities and generally of poor quality. Much of the wheat crop will be fed to swine this year. The winter finishing of cattle is not carried on to any extent in the Athabasca district.

The problem of soil fertility is receiving considerable attention from farmers. The use of sweet clover as a soil improver is popular. The interest in forage crops generally is very keen, and many different mixtures of grasses and clovers have been laid down. The use of commercial fertilizers in conjunction with forage crops offers promise, but has not been thoroughly tried out.

Local seed production is limited to forage crops, considerable legume seed being produced. Owing to the fact that there are no central seed cleaning facilities available, most of the seed is sold on an uncleaned basis. This tends to retard development.

Weeds are becoming a menace, there being no unified attempt at control. Thistles are spreading and infest many waste lands. Couch grass is prevalent and difficult to control. Patches of toad flax are showing up in widely scattered localities. Tartary buckwheat is causing losses but, unfortunately, little attention is paid to it.

Many scrub sires are in use and little interest is shown in the bull policy. Swine and sheep improvement policies are more popular, and a number of these classes were placed.

A beginning was made in the organization of junior club activities.

BERWYN

(F. F. Parkinson)

Crop conditions were good in the district, but much of the crop lodged before harvest. Wet weather caused sprouting in the stook and greatly increased the cost of harvesting.

Farmers are turning their attention from wheat to live stock, particularly hogs. There is an interest in cattle and swine im-

provement policies. Quite a large acreage of flax was seeded north of the river in 1941.

There was considerable demand for assistance in the adjustment of machinery and hitches. Advice was given on hay barn construction, including the utilization of local materials for same. A swine club has been organized in this district, replacing the grain club.

SUMMARY OF DISTRICT AGRICULTURIST ACTIVITIES

The services of District Agriculturists are effected by personal contacts, through correspondence, at meetings and by the distribution of printed material to which farmers may wish to refer from time to time. The headquarters of the Agriculturist is an office located at some point as convenient as possible to the greatest number of farmers in the district he is to serve. The Department maintains 15 permanent and three part-time agricultural offices in the Province. While statistics available do not measure fully the work which is accomplished by the District Agriculturists, the following review may be of some interest.

The number of meetings organized and attended by district men in 1941 totalled 972. Meetings of all kinds were attended by 47,758 persons or an average of about 50. In addition, personal visits were made on 11,262 farms during the year.

The importance of farm contacts cannot be over-emphasized. They avail the Agriculturist of an opportunity to render an opinion or give advice relative to a problem under direct observation.

District services are now developed to the point that many farmers seek information through a visit to the district office. In 1941, such interviews totalled 9,152 for the Province, or an average of nearly 600 for each office. In addition, 16,055 letters were written by District Agriculturists, many of them in reply to letters received from farmers seeking specific information. The number of bulletins distributed to farmers making inquiry for same was 26,777.

REPORT OF THE SUPERVISOR OF JUNIOR ACTIVITIES AND YOUTH TRAINING

(S. H. GANDIER)

The duties of Supervisor of Junior Activities were taken over by the present incumbent on May 1st, upon the retirement of Mr. W. J. Elliott on superannuation. Mr. Elliott had been in charge of this division of the Department's Extensive Service since the inauguration of the Dominion-Provincial Youth Training Plan in the Province in 1937. He brought with him many years of experience in work with rural boys and girls, and a sincere enthusiasm for service to the young people. These factors have contributed in no small degree to the success which has attended our junior activities during the past four years.

JUNIOR CLUBS

The junior grain and live stock clubs continued during 1940 under the same general set-up as for the past several years. The Department is guided by the District Agriculturists as to points at which new clubs shall be organized and old clubs shall continue to operate. The following table shows comparative figures with respect to club projects for the years from 1937 to 1941 inclusive:

Project	Number of Clubs					Membership				
	1937	1938	1939	1940	1941	1937	1938	1939	1940	1941
Swine	21	24	30	30	22	514	655	612	520	353
Beef	12	11	22	25	27	275	292	551	712	625
Dairy	2	10	10	12	9	35	205	258	274	186
	45	45	62	67	58	824	1152	1421	1506	1164
Wheat	54	71	74	78	54	723	1385	1260	1417	896
Oats	17	15	23	18	20	336	240	296	256	295
Barley	9	8	7	8	6	135	124	98	121	92
Flax	2	1	1	2	1	36	10	9	33	10
Potatoes	2	2		1	2	38	23		13	19
	84	97	105	107	83	1268	1782	1663	1840	1312

A study of this table reveals a decline in number of clubs in most projects in 1941, and in total membership. This decline may be attributed to some extent to war-time conditions and the absorption of many of our rural young men into various branches of the war services. Clubs were disbanded at a number of points where it was felt that they had served their purpose, this policy being followed especially in the case of grain clubs. New clubs are organized only at centres where certain phases of agriculture are definitely in need of development and where the boys and girls of the district will benefit directly through club activities.

Beef Clubs.

All beef clubs undertook the beef feeding project with the one exception of the Delia Club, which is rearing heifer calves for herd development. Beef club fairs, most of which were held from May 15th to the middle of July, were well supported generally by the local people, and sales of the finished calves were reasonably satisfactory. Several new clubs were organized in the fall, and most of the old clubs will continue next season. Some increase in the number of beef clubs can therefore be anticipated. This year it was found necessary to reduce the amount of prize money to beef clubs

as set out in the handbook, to conform with amount of grant provided to our live stock clubs by the Dominion Department of Agriculture.

Dairy Clubs.

Number of active dairy clubs in the Province has never been large. They have been promoted particularly in districts where improvement of dairy stock is desirable, and to a much lesser extent in those districts where the dairy industry is more highly developed, such as the milk sheds adjacent to the larger cities. Some difficulty has been experienced in the past two years in securing heifer calves for new clubs and for replacements in the older clubs. In October a depot for purchasing and collecting calves was established at Edmonton under the direction of the Live Stock Branch, source of supply being the Edmonton milk shed. Results to date have been somewhat disappointing, available supply being sufficient to meet only about half of the demand. In addition to the dairy club activities as provided for under the regulations, most of the members are now keeping production records of their home herds, and the herd record books are regularly checked by the Dairy Branch. Clubs are urged to undertake the herd record work if at all feasible.

The following special contributions for the encouragement of dairy club activities are gratefully acknowledged: Trip for two proficiency winners from each club to the annual convention of the Alberta Dairymen's Association, financed by the association; special prizes to clubs in which the Holstein breed predominates by the Alberta Branch of the Canadian Holstein-Friesian Association.

Swine Clubs.

Number of swine clubs was considerably reduced in 1941. In many districts they have achieved their main objective by introducing good stock and assisting to bring the standard of market hogs to a desirable level. More swine clubs might profitably be organized in outlying districts where the hog raising industry is in the earlier stages of development. With the present Canadian "bacon quota" for Great Britain in mind, the Dominion Department of Agriculture is inclined to encourage more swine clubs rather than other junior live stock projects.

Swine club fairs are held during the fall months. This year the unfavourable weather conditions of September and October, and a ban placed upon gatherings of young people for a time by the health authorities, prevented the holding of a number of swine club fairs when the hogs were ready for market. In most of such cases the judges scored the hogs on the farms and prizes were awarded on that basis.

Grain Clubs.

The grain clubs are supervised by the Field Crops Branch, and report of their activities is included in the report of the Field Crops Commissioner.

Provincial and National Judging Contests.

The plan of former years was followed in deciding Provincial championships for club teams in the judging of beef cattle, dairy cattle, swine and seed grain. District Agriculturists first held elimination contests in their own districts. These were followed by

contests held at Olds, Lacombe and Edmonton on October 8th, 9th and 10th respectively. Finals were held at the University in Edmonton on October 11th, and Provincial winners were declared as follows:

Beef Cattle—Team representing the North Edmonton Beef Club: Robert Lewis and Ray Rigney.
 Dairy Cattle—Team representing the Lethbridge Dairy Club: Eleanor Mullis and Dena Parry.
 Swine—Team representing the Liberty Swine Club: Evelyn Dunbar and Robert L. Dunbar.
 Grain—Team representing the Drumheller Grain Club: Bill Cole and Calvin McGhee.

These teams competed in the National contests at Toronto during the week of November 3rd. In competition with teams from the other provinces, our beef team captured the Dominion Championship. Placings of the other Alberta teams were: Grain, second; Dairy, fifth; Swine, seventh. The accompanying table sets out placings of teams from this Province since commencement of the Dominion contests in 1931, and shows that on the average Alberta has had its fair share of winnings.

ALBERTA PLACINGS, NATIONAL CLUB CONTESTS, TORONTO

GRAIN						BEEF							
Year	Club		Placing			Club	Placing						
1931	Consort		1st										
1932	Willingdon		4th			Falher	4th						
1933	Camrose		3rd			Tofield	2nd						
1934	Alliance		5th			Lacombe	1st						
1935	Grande Prairie		1st			Lacombe	1st						
1936	Stettler		3rd			Red Deer	6th						
1937	Wembley		1st			Edmonton	2nd						
1938	Airdrie		2nd			Red Deer	2nd						
1939	No contests												
1940	Nanton		3rd			Cremona	2nd						
1941	Drumheller		2nd			North Edmonton	1st						
Total Placings Classified					1st 3	2nd 2	3rd 3	Others 2		1st 3	2nd 4	3rd 3	Others 2

DAIRY						SWINE							
Year	Club		Placing			Club	Placing						
1931	Olds		7th			Wetaskiwin	3rd						
1932	Olds		4th			Grande Prairie	4th						
1933	Didsbury		6th			Liberty	3rd						
1934	Olds		6th			Taber	5th						
1935	Westmount		7th			Dina	1st						
1936						Liberty	1st						
1937						Liberty	1st						
1938	Lethbridge		5th			Liberty	4th						
1939	No contests												
1940	Camrose		5th			Liberty	1st						
1941	Lethbridge		5th			Libertv	7th						
Total Placings Classified					1st 8	2nd 10	3rd 6	Others 5		1st 4	2nd 2	3rd 2	Others 4

Grand Totals—1sts, 10, 2nds, 6; 3rds, 5; Others, 16.

Grand Totals—1sts, 10, 2nds, 6; 3rds, 5; Others, 16.

Conference re Junior Stock Clubs.

A conference of District Agriculturists, stock club leaders, and Department officers was held at the School of Agriculture, Olds, during Farm and Home Week, June 24th to 27th. The conference was called with the object of effecting improvements in the live stock club programme and to provide opportunity to the men in the field for interchange of experiences and ideas. At the conclusion of the conference it was generally felt that much had been accomplished toward placing the stock club work on a sounder and more organized basis. As a result of this conference a number of new features have already been added to the stock club programme and others are under consideration. Occasional meetings of this nature would greatly facilitate junior club work.

Proposed Club Week at School of Agriculture.

As a further encouragement to junior club work, the Department proposes to institute a short course of one week at the Olds School of Agriculture in the month of July for proficiency winners of all junior clubs. Details with respect to this course are now in process of preparation.

Alberta Junior Club Activities.

Issues of the Junior Club Bulletin have been published quarterly during the year by the Extension Service and copies are mailed to all club members. It consists of four pages, and contains live news of club activities within the Province as well as articles of information for all branches of the club work. This publication has received favourable comment from persons concerned with club work elsewhere in Canada.

SCHEDULE "E", DOMINION-PROVINCIAL YOUTH TRAINING PLAN

In 1937, when the Province and the Dominion entered into a five-year agreement providing for certain projects in Youth Training, Schedule "E" of the plan was placed under the direction of the Department of Agriculture. It has included periods of training at the Provincial Schools of Agriculture, special courses of apprenticeship on farms of various types, in creameries and apiaries, instruction in the grading of eggs and poultry and in agricultural mechanics.

War conditions of the past two years have materially altered the situation with respect to employment for young people, and it has been found unnecessary to continue several of the Youth Training projects undertaken during the first two or three years of the contract period. The following activities were carried during 1941:

Courses at Schools of Agriculture.

Each year a number of young men and women have been assisted by means of grants toward the expenses of regular courses in agriculture and home economics at the Schools of Agriculture. Twenty-eight boys and girls received assistance during the 1940-41 term, being equally divided between the schools at Olds and Vermilion. With the opening of the Olds School of Agriculture this fall, 10 girls and six boys were admitted to the second year of the course with assistance under the plan. Current regulations permit consideration of applications only from those who have already completed their first year. Total of students since 1937 who have had assistance to attend the Schools of Agriculture is 182.

Apprenticeship Projects.

In the fall of 1940 the apprenticeship projects were discontinued, and only those trainees who had not completed their allotted time were carried through to 1941. These were distributed as follows: On fur farms, 32; on poultry farms, 2; in creameries, 2. By November 30th, 1941, all periods of apprenticeship were finished, and this branch of the schedule is now definitely ended. The following figures indicate apprenticeships in agricultural projects since 1937:

Fur Farming	171	Poultry Grading Courses	45
General Farming	62	Farms on grey wooded soils	41
Creameries	24	Market Gardens	22
Poultry Farming	25		
		Total apprenticeships	390

It will be noted that the number placed on fur farms far exceeds those in any other group. Fur farmers were eager to obtain young men on the conditions set out by the project, and many unemployed youths were interested in learning the fur farming business as a means of livelihood. Quite a number of these trainees are now in the fur farming business for themselves, or have accepted full time jobs on fur farms.

Farm Mechanics Schools.

In the business of modern farming, a knowledge of farm mechanics has become more and more essential. For the benefit of young men in the country who expect to be engaged in farming as a life-time pursuit, schools of six weeks' duration each were held at six points throughout the Province during the fall and winter of 1940-41, where instruction and actual shop practice were available in motor mechanics, farm machinery, woodworking and blacksmithing. Towns at which the schools were located, with dates of sessions and registration at each, are listed below:

Centre	Commencing Date	Registration
Nanton	November 12th, 1940	39
Stettler	November 12th, 1940	30
Bassano	January 6th, 1941	37
Viking	January 6th, 1941	49
Hanna	February 17th, 1941	27
Provost	February 17th, 1941	51
Total Registration		233

The following points might be mentioned for purposes of record:

Regular staff of instruction at each school consisted of three men, one giving the work in motor mechanics and farm machinery, one for carpentry and tinsmithing, while a local blacksmith was engaged by the day for the blacksmithing classes. A maximum of 40 students for each school was set as the greatest number that might be efficiently handled by the three instructors. For the two schools which over-ran this number, it was found necessary to engage a fourth instructor. Schools were placed at points where comfortable accommodation at reasonable rental rates was available for the shop work and classes. Suitable floor space was necessary for the motor mechanics and machinery, also a large room for carpentry work and an assembly room for lectures. The schools are equipped with an adequate line of tools, work benches, forges, anvils and other appliances. In addition to the regular classes in mechanics, some time was given to special soil and cultural problems of the district, especially as they relate to the use of farm machinery. The District Agriculturist assisted with this phase of the instruction. Some assistance was given to necessitous students toward board and room and transportation costs. On closing day at each school a very fine exhibit of the work done by the students was on display for public inspection, and drew large crowds.

These special farm mechanics schools proved to be very popular with students and public alike. Apparently they meet a great need of the average young man on the farm as farm operations become more and more mechanized. Because of their success last winter it was decided that they would be continued in the fall and winter of 1941-42. Commencing November 10th, schools were held at Bow Island and Gleichen, with an attendance of 26 and 32 respectively. On January 5th, 1942, schools will open at Castor and Trochu, but points in the north for schools commencing the middle of February are not yet selected.

REPORT OF THE ACTING SUPERVISOR OF RELIEF SETTLEMENT

(E. B. SWINDLEHURST)

The Relief Settlement Plan was introduced in Alberta in 1932, in order to assist selected families who would otherwise be in receipt of direct relief, to settle upon the land, with a view to their becoming self-supporting. At that time the problem of unemployment and the burden of relief assistance were matters which were receiving considerable attention, and it was decided that a policy of land settlement might offer a partial solution. In the urban centres were many families who had previously had agricultural experience and who, if offered financial assistance, would welcome an opportunity to return to rural life.

Numerous applications have been received since that time, and although it was necessary to reject certain of these, due to ineligibility or unsuitability of the applicant, a sufficient number of families have been established to prove the merits of the plan. All applications are submitted to the Advisory Board, which is composed of representatives of the Dominion and Provincial Governments and Colonization Departments of the Canadian Pacific and Canadian National Railways. The work and experience of the members of this Board have been greatly appreciated. In addition to interviews with applicants and consideration of applications, the duties of the Board have included approval or rejection of lands chosen by applicants, upon which reports were prepared by inspectors of the Department; consideration of land agreements; a check of progress reports upon completion of the second year of settlement, to ascertain whether or not assistance could be considered necessary during the third year, and if so, how this could best be used to the advantage of the settler. Third year assistance was withheld originally as a sustenance reserve, but in many cases it has been found advisable to purchase additional stock or equipment with a view to earlier establishment, instead of providing grocery orders.

Settlement has continued in varying numbers each year. In the two years preceding the outbreak of hostilities, settlement was quite active, resulting in the placement of 141 families in 1938 and 149 in 1939. In 1940 some improvement was evident in employment conditions, and 52 families only were placed. In 1941 conditions further improved, but settlement on a limited scale was continued, and 14 families were established on farms.

There are at present 599 families (including 2,360 dependents) continuing under the Relief Settlement Plan. Many of the families are now well established, and several have made some repayment of assistance offered. In spite of increased employment, the percentage remaining on the land is still 54.9 of the total number placed, and since many abandonments have been due to enlistments and other employment, the results are by no means unsatisfactory. Causes of abandonment are as follows: Enlisted, 41; failures, 181; obtained other employment, 154; other causes, 117.

REPORT OF THE OLDS SCHOOL OF AGRICULTURE

(JAMES MURRAY, *Principal*)

The spring term was brought to a close on the evening of April 9th, when diplomas in Agriculture were awarded to 48 students and in Home Economics to 27 students who had satisfactorily completed their respective courses. We were glad to have as a speaker to the graduating class, Dr. Fred McNally, Deputy Minister of Education for Alberta. The Department of Agriculture was represented by Mr. W. J. Elliott, who was the first Principal of this school, and who until recently has been Principal of the School of Agriculture at Vermilion.

Of the students who graduated, a number are now in the armed forces, seven are in attendance at the University of Alberta taking a degree course in Agriculture, and most of the others have returned home to their respective farms.

Following are the winners of medals, scholarships and important prizes during the year:

Gold Medal for General Proficiency in course in Agriculture for the two-year course—Charles Andrews, Vulcan.

Gold Medal for General Proficiency in two-year course in Home Economics—Signe Blanche, Gwynne.

Scholarships of \$100.00 each to graduating students who enter the University for a degree course in Agriculture offered by the Surplus Wheat Board Monies Trust; Edwin Patching, Lethbridge; Ellis Oviatt, Parkland; Robt. Woods, Camrose; Arledge Hill, Sterling.

A similar scholarship to a student in Home Economics tenable at the University of Alberta was awarded to Mary Keough of Drumheller.

General Proficiency Scholarships of the value of \$75.00 in First Year work were awarded to: In Agriculture, Thomas Turner, Consort; In Home Economics, Evelyn Havens, Madden.

Mr. A. L. Searle Scholarships, each of \$50.00, awarded for Progress in work of First Year—Agriculture, Samuel Peterson, Delia; Home Economics, Margaret Kilpatrick, Legend.

Girls' Alumnae Scholarship of \$50.00 to the student in Home Economics who makes satisfactory progress in academic work and makes contributions of value to the athletic, social and literary life of the School—Evelyn Wood, Hill Spring.

O.S.A. Experimental Union Scholarship of \$50.00 awarded on the same basis as above—Wm. McGuire, Calgary.

Alberta Women's Institutes Prize of \$50.00 to the Second Year student in Home Economics with the best record for the year considering class work, character, deportment and her activities in social and literary life of the school. This prize was awarded to Dorothy Hertz of New Brigden.

STUDENT HEALTH

All students are given a physical examination by the school doctor within a few days after being admitted. Such examinations frequently detect weaknesses that require special treatments during the school year. Students are also given the Schick and Dick tests to indicate if they are susceptible to Diphtheria or Scarlet Fever. Those who are susceptible are immunized during the fall term. This work has been done during the past two years by the Medical Officer of the Rosebud Health Unit, which includes the Olds district.

Students returning to the school after the Christmas holidays brought with them Red Measles, German Measles and Chickenpox. In a few weeks the two kinds of measles assumed epidemic proportions, and for a time we had between 40 and 50 on the sick list.

With our most inadequate facilities for looking after the sick, they were attended to with no little difficulty. Each and every year we have the same trouble, but from year to year our hospital facilities remain unimproved.

ENROLMENT

For many years now we have had all the students for which we have accommodation. The dormitories have been full, and from 15 to 50 students have had to find rooms in town, frequently in houses none too comfortable. Last fall we accepted applications until we were over the 200 mark and then had to ask those who applied to wait a year for admittance. Our limit for the accommodation of students in Home Economics was reached about the middle of September, and for those in Agriculture two weeks later.

A few of those who applied did not register for various reasons, mainly backward threshing season. Our actual registration is as follows:

	Agriculture	Home Economics
First Year	65	32
Second Year	40	26
Two-in-One	13	12

Our second year classes are somewhat larger in proportion than the other classes on account of the closing of the Vermilion School. We have enrolled 11 students in Agriculture and 11 students in Home Economics in the second year who took their first year work at Vermilion. We have a fair representation in the first year classes from the northern part of the Province, formerly served by the school at Vermilion.

Our two-in-one class in Agriculture is smaller than formerly since the change in the University of Alberta degree course requirements. Now a student with Grade XII can complete his degree course at the University in four years if he goes there direct from high school. If he comes here first for our two-in-one course he still has to put in four full years before graduating. In consequence, we have fewer Grade XII students than usual in our two-in-one class.

STAFF CHANGES

During the summer Mr. Murdoch McLellan, who has done excellent work for the past six years as instructor in metal work, resigned to accept a better position with the City of Calgary. His place was filled by moving Mr. Howard Armstrong from Vermilion. Miss Helen McCaig, who has been instructor in Home Economics for five years, was married, and Miss Lillian Ferbey was appointed. Miss Helen Gunn, who has been on our nursing staff for three years, was married, and Miss K. Young has taken her place. Both Miss Ferbey and Miss Young were on the Vermilion staff last year.

COURSE OF STUDY

The course of study in both Agriculture and Home Economics has been changed to a limited extent in recent years, but the general scope and object have not been materially altered. The agricultural course is planned primarily for the young men from Alberta farms who intend to engage in some phase of practical farming. Of those who complete the two-year course, less than 10% proceed to the University for a degree course.

The subjects on the course of study are those with which the practical farm is daily brought into contact—soils, crops, weeds, fer-

tilizers, live stock, machinery, poultry, dairying and horticulture. Students are introduced to a study of the principles underlying successful crop and stock production and practices which have proven adapted to certain conditions of soil and climate. He is given actual practise in the carpenter and blacksmith shops, in judging grain and seeds, in planning grounds and laying out farmsteads.

The farm connected with the school is stocked with Shorthorn and Ayrshire cattle, Yorkshire hogs, Percheron horses and Hampshire sheep. Classroom material to study breed and market types are drawn from these flocks and herds. Judging classes are also drawn from the same source. The students get instruction in feeding stock for maintenance, fattening and milk production in using the feeds available on Alberta farms. They also get instruction in fitting, training and showing the various types of live stock, and are required to do the actual work of trimming, washing, dressing and showing the animal in the show ring. This annual exhibition has become known as O.S.A. Little Royal. It is usually held about the middle of March, and is attended by several hundred visitors.

The course for young women, like the one for men, extends over two years each, lasting from the middle of October to early in April. It, too, is of a practical nature, planned for those who come from farms and intend to become home-makers. A small percentage of those who graduate take advanced work at the University for a degree.

The more important subjects are sewing, cooking, foods, household management, home nursing and first aid, but courses are also given in poultry, dairying, horticulture and manual training.

Both the agricultural and Home Economics students are required to take work in English and Mathematics, as many students enroll with a very poor grounding in these subjects. Students are admitted to both courses regardless of their previous school standing, but the majority have at least Grade IX standing.

One of the interesting days toward the close of the school is Achievement Day. At that time the students in Agriculture exhibit some of the work they have done during the year in carpentry, blacksmithing, drawing, botany, chemistry, dairying and poultry. The women students show the product of their work in sewing, cooking, weaving, nursing and manual training. Last year we had about 600 visitors on the afternoon of Achievement Day, many of them parents of the students.

DORMITORY ACCOMMODATION

We have accommodation in the women's dormitory for 70 students and in the men's side for 90. We endeavour to have all the women students live in unless they can stay with relatives, but each year we have quite a number of the men who have to get accommodation in private homes. While many of these are comfortably housed, they do not have the advantages that come from living with the other students. They lose a phase of their education which is not the least important. It would be a great advantage to them if we could have the dormitory enlarged to accommodate about 50 more students.

SUMMER COURSES

During the summer months we had various courses at the school from June 20th to August 8th. In that period we had over 2,000

people at the school for various meetings—some for men, others for women and some for young people.

Farm and Home Week, held from June 23rd to June 27th, provided a programme mainly along live stock lines for the men and special lectures each day for the women. The attendance varied from 250 to 500 each day, with a total for the week of about 1,300.

A conference of club leaders held during the week brought men and women from widely separated parts of the Province who are interested in the work with young people. We were particularly glad to welcome them in order that they might become better acquainted with the facilities that the school offers for the education of rural young people.

The School of Community Life, sponsored jointly by the Extension Department of the University, the Department of Education and the Department of Agriculture, was held from July 3rd to July 11th. In conjunction with it, the Alberta Federation of Agriculture held its annual meeting. The attendance varied from 70 to 150 each day.

The Girls' Clubs Convention brought delegates from all parts of Alberta to the number of 90. Part of the programme was taken by members of our staff.

Two School Fair Scholarship Short courses were held—one for the Olds district and one for the Vermilion district. There were about 170 young people here during the two weeks, representing all the school fairs held during the fall of 1940.

Farm Women's Week continues to be popular. We had about 90 women here for a four days' programme, terminating August 8th. We were glad to have Hon. D. B. MacMillan with us for the closing session.

We also had a number of large picnics by various agricultural organizations, several district club meetings for grain and live stock clubs, and meetings of girls' clubs, all of which brought several hundred visitors here for one or more days.

OTHER ACTIVITIES

The Experimental Union had a membership in 1940 of between 300 and 400, to each of which were sent four selections of surplus material from the gardens and plots, thus starting many of them in good varieties of potatoes, grain, grasses, flax, etc., and much ornamental material for gardens and grounds.

Our trial orchards and gardens continue to grow and yearly attract more attention. We now have over 200 varieties of apples and crabs on trial. Last year we had fruit from over 50 varieties.

We have in our Field Crops trial grounds many of the new varieties of cereals, grasses and clovers, and new strains of some of them developed here. Seed of these is made available to seed growers from time to time. We have as well many new numbered varieties of wheats on trial in co-operation with the cereal division of the Experimental Farms, tests of fungicides for the control of plant diseases, several hundred samples of wheat from farmers for classification and report.

Our grey soil work west of Olds, Didsbury and Innisfail has been continued and extended with very gratifying results. We hope to put some of the results in the form of a circular some time this year.

REPORT OF THE VERMILION SCHOOL OF AGRICULTURE

(S. H. GANDIER, *Principal*)

As a measure of economy during war-time, the Vermilion School of Agriculture was closed as at April 30th, 1941, therefore this report deals with only the first four months of the year.

As mentioned in the report for 1940, registration for the 1940-41 term in the regular courses in Agriculture and Home Economics totalled 110 students, which was considerably below the average enrolment of the previous ten years. In addition, residence and classroom accommodation was provided for 45 young men and women taking a special course in Rural Leadership under the direction of Schedule "A" of the Dominion-Provincial Youth Training Plan. This course was in session from January 13th to March 1st.

The annual Achievement Day, popularly known as "The Little Royal," was held on March 26th, and attracted an exceptionally large number of visitors from Vermilion and district and from considerable distances. Student exhibits in most branches were of an exceptionally high standard, and more originality than usual was in evidence throughout the entire display.

Closing exercises for the school term were held on April 9th. As the roads were good for that season of the year, a larger number than usual of parents and friends were in attendance. The graduation exercises were preceded by a fashion parade, in which the work accomplished in the sewing classes was effectively displayed. Speakers for the day included Dr. R. G. Newton, Dean of the Faculty of Agriculture, University of Alberta, the Hon. W. A. Fallow, Minister of Public Works, and Mr. J. R. Sweeney, Deputy Minister of Agriculture. Graduation diplomas were presented to 19 girls and 2 boys, while 3 girls and 5 boys received certificates of attendance, diplomas being withheld in these cases pending completion of work in certain subjects.

PRIZES AND SCHOLARSHIPS

Prizes for the term's work were liberally donated by local merchants and business concerns. Other contributors were Singer Sewing Machine Co., Winnipeg; McCall Publishing Co., Toronto; Robert Simpson Co., Regina; T. Eaton Co., Edmonton; Wabasso Cotton Co., Three Rivers, Que.; The Boys' Shop, Edmonton. The main scholarships and prizes were awarded as follows:

Wheat Board Surplus Trust Fund Scholarships of \$75.00: To the First Year boy and girl standing highest in general proficiency (toward expenses of Second Year)—Wm. Woodbridge, Edgerton; Gladys Taylor, Chauvin.

Wheat Board Surplus Trust Fund Scholarships of \$100.00: Five Scholarships in all, four to graduates in Agriculture, one to a graduate in Home Economics (toward expenses of the First Year at the University of Alberta)—Kenneth Baptist, Tofield; Keith Chalmers, Clandonald; Arthur McGinnis, Pickardville; Donald Norem, Berwyn; Mary J. Hawrelak, Wasel.

Alberta Women's Institutes Scholarship of \$50.00: To the First Year girl obtaining highest standing in the practical work of the course (toward expenses of the Second Year)—Barbara Linville, Rusylvia.

T. Eaton Co. Prize for General Proficiency, Second Year girls—Mary Hawrelak, Wasel.

T. Eaton Co. Prize for General Proficiency, Second Year boys—Arthur McGinnis, Pickardville.

Special Prize from The Boys' Shop, Edmonton, to the Two-in-One student contributing most to the welfare of the student body and to residence life—Minerva Marler, Bremner.

Silver Medals, contributed by the School Staff, to the boy and girl of the Second Year graduating class selected by staff vote as the best all-round students; in addition to scholarship, consideration is given to their social, literary and athletic activities—Mary Hawrelak, Wasel; Arthur McGinnis, Westlock.

THE STAFF

Personnel of the school staff for the 1940-41 term was as follows: Principal and Instructor in Economics and Civics, S. H. Gandier, B.S.A.; Instructor in Farm Management, Poultry and Veterinary Science, D. A. Andrew, B.S.A.; Instructor in English, Mathematics and Entomology, W. G. Malaher, B.S.A.; Instructor in Field Husbandry and Horticulture, A. M. Wilson, B.A., M.Sc.; Instructor in Science and Soils, N. N. Bentley, B.A., B.Sc.; Instructor in Mechanics and Woodworking, H. W. Kitching, B.S.A.; Dietitian and Dean of Women's Residence, Miss L. M. I. Milne, B.Sc.; Instructress in Sewing Clothing and Design, Miss I. Dawe; Instructress in Cooking, Dietetics and Foods, Miss E. M. Lee, B.Sc.; Instructress in Cooking, Laundry and Household Administration, Miss L. Ferbey, B.Sc.; School Nurse and Instructress in Home Nursing, Miss K. Young, R.N.; Instructor in Blacksmithing, H. Armstrong; Dean of Men's Residence and Assistant Instructor in English and Mathematics, L. Blades; Bookkeeper and Assistant Dean, P. A. Alt; Stenographer, Mrs. K. I. Bell; Instructor in Dairying (part time), R. H. Powley, B.S.A.

Following the graduation exercises on April 9th, the staff members completed their examination returns, took inventories of supplies and equipment, and prepared all departments of the school for the closing of the Institution at the end of the month. In so far as was possible, the Department transferred instructors to other branches of Departmental work. Several found suitable employment with educational institutions in other provinces or continued with their own higher educational training.

DISTRICT AGRICULTURIST SERVICE

For several years the area from Fort Saskatchewan east to the Provincial boundary has been divided into two separate districts, Vermilion West and Vermilion East. Two members of the school staff have acted as field men for the Department—N. N. Bentley for the western section and D. A. Andrew for the eastern section. When the school was closed in the spring the two districts were combined, and D. A. Andrew was appointed permanent District Agriculturist in charge with headquarters at the town of Vermilion.

THE APIARY

Thirty colonies of bees were placed in winter quarters in the fall of 1940, all in outside wintering cases. No artificial feeding was done. When the school was closed in April, the apiary continued its operations under the direction of D. A. Andrew, District Agriculturist.

EXPERIMENTAL PLOTS AND HORTICULTURAL SECTION

With the closing of the school in the spring, the experimental plot was discontinued. In the horticultural section, the orchards were placed in the care of the Demonstration Farm, and some of

the nursery stock was removed for Government use elsewhere. The Demonstration Farm, which continues to function as such, was made responsible for care of the school campus, which was kept in reasonably good condition throughout the summer.

THE SCHOOL BUILDINGS

When the school was closed in the spring, the Provincial Government offered the entire school plant to the Department of National Defense for any purpose that might be found expedient during the war period. The buildings have not yet been taken over for war services, and continue for the present in the care of the Provincial Department of Public Works.

V.S.A. ALUMNI ASSOCIATION

The School Alumni Association has been very active for the past several years, and has held well-attended reunions semi-annually, one in July and another in November after the opening of the fall term. The members as a whole, including many of the earlier graduates, have a sincere and enthusiastic interest in the fortunes of the school and in all of the services that it has endeavoured to carry to the rural districts of Northern Alberta. Though the school buildings were not open this summer, the Association decided to hold its reunion as usual. It was held at Lakeview Inn, South Cooking Lake, near Edmonton, on July 11th, and about 300 ex-students and friends were present. Regular issues of the association's paper, "The Radio," have appeared throughout the year. The association continues its regular activities in the hope and expectation that the Vermilion School of Agriculture will eventually reopen for classes once more.

REPORT OF THE PROVINCIAL HORTICULTURAL STATION, BROOKS

(P. D. HARGRAVE, *Assistant Superintendent*)

The importance of horticultural products, especially those produced in Canada, in Alberta and particularly those of the home garden, cannot be over-emphasized during periods of war conditions. There were never sufficient fresh foods consumed during peace time by the average individual. The ability of the urban and rural home owners to pay cash for fresh fruits, vegetables and salad crops is further limited with the war-time curtailment of purchasing power. The smallest piece of land, well cultivated, can grow vegetables. The town lot and farm garden can grow fruit. The more encouragement given to the production of these food-stuffs the more varied will be the menu, and a resulting smaller amount will have to be imported. During the last war, home-grown vegetables and fruits played an important part in the food of the nation. It is becoming of increasing importance as the present conflict progresses.

Progress and changes were made during the past season. The Station carried on with its own appropriation for the first time. Supervision and work of the Demonstration Farm, which has always been a part of the Station grounds, was added to the duties of the horticultural staff. Improvements have been made to the buildings, irrigation structures and grounds. New varieties of fruit introduced to the Station included apples, crab-apples, plums, pears, cherries, apricots and a number of inter-species hybrids as well as numerous ornamentals. Services of the Station are meeting with ever-increasing demands. A typical example of this is that, in 1940, there were 92 shipments made, while in 1941 this was increased to 167.

SEASONAL CLIMATE AND GROWTH

Our varieties must first withstand cold winters and mild winters, next they should bloom and ripen during the frost-free period, and must be able to withstand extended periods of drought. It is valuable, then, for reference to have a carefully maintained record for the seasons:

TEMPERATURE RECORD FOR THE YEAR 1941

	Temperature				Precip.
	Ave. Mox.	Ave. Min.	High	Low	
January	24.3	5.5	50	-20	.38
February	29.7	32.1	47	-17	.22
March	37.8	15.3	63	-10	2.11
April	61.0	31.5	79	19	.28
May	67.4	40.0	84	31	3.28
June	76.6	49.1	101	40	.72
July	86.4	56.1	100	43	.92
August	78.5	52.6	91	24	2.00
September	62.7	35.8	77	24	2.09
October	58.5	30.7	70	12	
November	46.7	22.0	63	-6	
December	31.03	11.09	60	-24	.05
					<u>12.05</u>

The winter of the past calendar year was the mildest since that of 1931. The lowest temperature during the first part of the year was -20°F, which was recorded in January. This was not the

lowest temperature of the 1940-41 winter season, as a low of -22°F had been recorded in November, 1940. No severe weather was experienced during the latter part of the year until the last few days of December, when temperatures below zero were experienced. The low of -24°F occurred on the last day of December. There is a possibility that these moderately low temperatures might be severe in their effects because of the lack of snow covering. The spring was early, with growing temperatures prevailing in April. The temperature rose above 40°F on the last seven days of March and for 29 days in April. The last spring frost was late, occurring on May 22nd. The first killing frost of September 25th gave a frost-free period of 125 days, the shortest since 1936. May was very wet, with a total precipitation of 3.28 inches. June, July and August were hot and dry, giving this district the hottest summer experienced in many years. The last week of August and most of September was wet. Late September, all of October and November were open with very little frost. The first snow fell on December 10th, but the ground was bare again by the middle of the month. Fruit varieties that came through the winter of 1936-37, when a minimum temperature of 47°F below zero was experienced, were killed to the ground this past spring. The plum Fiebing, an outstanding variety, was a typical example of this. Much damage, which was not as extensive as expected, was caused by the sudden cold spell of November 22nd, 1940. Many trees, particularly apples, came through the winter without dropping their previous season's leaves. Notwithstanding this lack of maturity, apples, pears and apricots came through in good shape. Some plum varieties were severely damaged. Careful winter killing records from all the test orchards are on file.

Blossom season was early, with Nanking cherries and pears in full bloom by the end of April. This was to be expected after the warm weather of that month. Fortunately most of the fruit was set before the killing frost of May 22nd, which damaged any bloom left. Small fruits yielded well, and 23 tons of marketable tree fruits were picked. The first edible apricots were gathered during the season. Cherries gave a fair yield; plums, crabs and apples bore heavily. Tree fruits ripened early, and the first sales were made on August 22nd. These sales included apples, crab-apples and plums. Cherries were marketed early in July. A great deal of breakage resulted from overloaded branches. This was aggravated by the wet weather during the early part of the picking season. Due to cool, damp days, many tons of fruit dropped on the ground before it could be harvested. Some trouble was experienced in supplying customers who gathered during this period due to inclement weather. Much more fruit could have been disposed of. One commercial store in Calgary alone handled $5\frac{1}{2}$ tons of plums. Large shipments of the better crabs were also made to Calgary markets. This was the first shipment of this type, and the fruit sold in competition with imported fruit.

The bulk of the fruit was for the first time handled in cardboard cartons. The innovation was most successful. Test shipments were also made in 10 and 20-quart baskets. The purchasers showed a preference for the large size when packed with crab-apples, but the four-basket crate sold plums to better advantage.

The new test orchards completing their fourth year yielded some fruit. A higher percentage of plums fruited than apples.

No marked winter injury has been noticed on the well established varieties.

Damage by pheasants to our increaser plots was severe. Some varieties of bean, peas and soy-beans were replanted or ploughed under. These birds also damaged about 75% of the popcorn seed plot. It is becoming increasingly difficult to control these game birds, and more drastic measures will have to be adopted.

The plot of strawberry clover failed to winter well, but sufficient growth developed to recover the plot. This type of clover used in reclaiming alkaline land, if proven hardy, would be of great value in the irrigated areas.

VARIETAL TREES

The apple and crab-apple test orchard now has 623 varieties under test. Many of these fruited this year for the first time, and records have been kept of the yields. The whole of this large orchard will require a careful pruning in the spring of 1942. The plum, apricot and cherry test will also require this attention.

New varieties of trees and shrubs introduced to the grounds numbered 121. These included evergreens, shrubs, tree and small fruits. Some 73 new varieties of fruits and ornaments were seeded. This, of course, is over and above large quantities of seed gathered at the Station that is sown for propagating purposes.

The total number of Demonstration Orchard plantings throughout the Province now number 36. The first of them are completing their fourth growing season, and the districts represented will be holding their second field day during the coming year. Fourteen of the total number of these demonstration orchards were planted during the past season. Aside from the demonstration orchards, there were 37 small orchards sold through the local nursery to farmers in the Eastern Irrigation District. The total of 167 shipments of test trees, seeds and scion wood were sent to various parts of the Province.

In co-operation with the Forest Service, Department of Lands and Mines, distribution was made from this Station of 20,000 White spruce, 2,000 Colorado Spruce, 1,000 Larch, 500 Norway spruce, and 25 Sitka spruce to the farmers in the Eastern Irrigation District.

Cuttings of 28,000 deciduous shelter-belt trees were also made available from this Station to the farmers.

The number of Station fruit introductions was increased by four, bringing the total to 37. Three of these numbered fruits have been named. They are Brooks Sandcherry, Alred and Sapalta.

Brooks Sandcherry, originally known as Brooks No. 1, was first made available to the nurserymen of the prairie in 1935. It was selected for first trial in 1931 by Mr. A. Griffin, and was later highly recommended by Mr. M. B. Davis, Mr. W. R. Leslie and the late Mr. George Chipman. It was on these recommendations that the selection was propagated for introduction. The name Brooks Sandcherry was so widely adopted that no registered name has been offered.

The selection was made from a group of seedlings four generations removed from the original material. The Brooks is characteristically a sandcherry in leaf and fruit type, but is upright in habit. The fruit is oval rather than round, and measures $\frac{7}{8}$ inches by $1\frac{1}{8}$ inches, is thin skinned, moderately firm, juicy and a good

canner. The skin has a tendency to toughness when used for sauce. It ripens early and is prolific.

Alred, originally known as Al-14-B-4 and Brooks No. 4, is an open pollinated seedling of Hopa. Its male parent is very likely Yellow Siberian. The fruit is a small crab, being one inch by one and a quarter inches in size, round to cylindrical; skin dull red with a few scattered white dots; very thin and does not bruise; flesh is fine, very firm and light red throughout; flower is bright red with an intensity rating of three when compared with Hopa, which is duller with a rating of one; stem cavity medium shallow with medium long greenish colored stem; calyx cavity shallow with large persistent calyx; carpels small. The tree is of upright habit, and was named on the request of nurserymen by whom it was introduced in 1937. It is not as hardy as its full sister, Brooks No. 11.

Sapalta, originally known as Brooks No. 3, 8-D-17, Brooks Sapa, Sandhill Sapa and Sapa Seedling, is a bush type sandcherry-plum, closely resembling Sapa. It was first introduced for test in 1934, and named for Mr. A. Griffin in 1941. It is hardier and earlier than Sapa, and slightly less clingstone. The clearest factor in its identification is a clean, straight shallow suture running at a slight angle to the edge of the seed. This is not present in Sapa.

Brooks No. 34 is a crab-apple resembling Dolgo, but lacking Dolgo's strong acidity.

Brooks No. 35 and No. 36 are sandcherry selections of good size, flavour and cooking quality.

Brooks No. 37 is a small, dark skinned plum of high quality, originated from seed imported from Manchuria.

TEST PLOTS

As in previous years, some work was carried on with vegetables. The tests included tomatoes, potatoes, dry beans, green beans, soy beans, sugar beets and melons.

The tomato varietal plot had its varieties reduced to 22, which number included Earliana and Burbank. These two varieties are always included as checks so that our yields can be referred to from year to year. Earliana produced 1.19 pounds of ripened tomatoes per plant; Farthest North X Burbank, 8.1 pounds per plant. The are of particular value when compared with the significantly higher ones of the newer varieties. The Station selection of Bison, Strain No. A3, led the test with 10.2 pounds of ripe fruit per plant. It was followed by the following varieties in order: Bounty, 9.3 pounds per plant; Bison, Strain No. A1, 9.3 pounds per plant; Alred, 8.5 pounds per plant; Farthest North X Burbank, 8.1 pounds per plant. The latter, standing fifth in place, was of greatest interest to vegetable growers in the central and northern part of the Province, where early maturity is of utmost importance, because it had the greatest weight of ripe fruit at the first picking.

The potato test conducted with certified seed supplied through the Seed Potato Producers of the Province, gave the early varietal types the best yield. The yields were as follows:

	Pounds per plant		Pounds per plant
Early Epicure	3.85	Carter's Early Favorite	2.88
Vic's Early	3.76	Netted Gem	2.85
Warba	3.68	Bliss Triumph	2.58
Early Ohio	2.95	Irish Cobbler	2.1

The yields of the latter variety should not be given too much significance until further trials are made. Trials will be extended considerably during the coming season and fertilizer tests will be included.

Included in the bean plots were 101 varieties, including new introductions from California. These latter were placed under test on the request of Professor W. W. Mackie. Although these strains were developed for early maturity in California, it will take a number of years of careful selection before their season will make them available to Alberta gardeners.

Also included in these were the final tests resulting from careful selection of soy bean varieties. The most promising varieties ripened in the following order: Pagoda, Agate, New Kabott, Kabott, Early Wisconsin Black and Mandarin. Pagoda and the Kabott types are promising, and will have a future in Southern Alberta.

Co-operating with the Field Crops Branch, a test plot of sugar beet was sown for seed production and a future breeding programme.

The yearly search was again made through the planting of a varietal test for early maturing types of melons to be used in our selection and breeding work. The most promising types were again selected from segregating plots of Station Hybrids.

EXTENSION

The work at the Station is spreading further afield each year. As it becomes more generally known that Alberta has a Station whose work is devoted to horticultural problems, more requests for information and help are received. Test orchards are now distributed across the width of the Province and from Township 6 to Township 87. Demonstration orchards are also scattered throughout the Province from Township 8 to Township 83. The majority of the trees in the plantings are doing exceptionally well, showing little or no winter killing, and are leading the way to further plantings in their community.

The Station staff, co-operating with the Extension Service and the District Agriculturists throughout the Province have encouraged demonstration orchard plantings. Trees for 14 of these plantings were supplied during the season. The staff of this station assisted at four of the planting field days. Assistance was also given to 38 other meetings during the year. These included field days, short courses, lectures and club meetings.

There were four organized field days on the grounds of the Horticultural Station. As in previous years, there were numerous small informal gatherings, but it does put a tremendous strain on the staff during busy periods.

The answering of queries and the supplying of information requested by correspondence is becoming a much heavier burden each season. Correspondence during the past year has passed the total of the correspondence for the three preceding years. This is not surprising when one stops to realize that there are more people in some way interested in horticulture than in any other one occupation.

The work of the girls' clubs started in this district in the spring of 1940, and was carried successfully through the past winter. Their second summer project has been completed, and all clubs

have commenced their winter course. One development that we have found to be of great assistance in the maintenance of club interest was the formation of a joint club committee between one of the boys' clubs and girls' clubs. This committee is comprised of representatives from each club, who organize joint meetings apart from their regular work. Two of the clubs financed and took an education trip to other parts of the Province. The leaders of all the clubs attended and benefitted from the leaders' course held during the past summer.

CONCLUSION

This report covers the highlights of the programme carried out during the past season. The potato, onion, bean and tomato work have found their justification in the development of commercial production of varieties selected here. The markets available to this type of production are very specialized. They are developing rapidly, and are deserving of every assistance we can give them. This is of particular interest because it is developing from the secondary work carried on. Fruit development and testing has been and will always be the first consideration.

Horticultural Extension work is another field needing greater attention than the staff at the Station can possibly handle.

REPORT OF THE PROVINCIAL FARM, OLDS

(WALTER ROSS, *Manager*)

The crop year of 1941 was an abnormal one in many respects, and yields on the whole were considerably below average. Though the spring was early and dry and conditions for seeding were good, this period was followed by an unusually long dry spell of hot weather which seriously retarded all crops. The hay crops suffered severely, producing only about one-half their normal yield. The home farm made quite a good recovery when the rains finally came in July. Oats on summerfallow threshed about 80 bushels per acre. At the south farm the early dry conditions had more telling effects, especially on spring plowing. The barley crop was poor, producing a yield of 20 bushels. On the McKercher farm, which is badly infested with weeds, a great deal of spring cultivation was done before seeding as a means of weed control. With little rain following, the grain crops did very poorly. About 30 acres of this farm was seeded down to a mixture of oats and rye. This provided ample pasture for the Aberdeen-Angus herd until late in the fall.

All of the live stock has done quite well considering the dry year. The Percheron stallion "Chief Laet" was stationed at the farm on the same arrangements as in former years. Horse sales through the year have been very disappointing, especially during the fall months. Six good colts are being raised. There are a number of exceptionally fine young animals in the Aberdeen-Angus herd on the McKercher farm. Three or four young bulls of good quality will be offered for sale next spring. Quite a number of inquiries for young stock of this breed have been received. The Shorthorn herd on the home place has been reduced to some extent since last year, making the remainder of the herd quite a good selection. There is always a fair demand for Shorthorns in the Province. Our Ayrshire herd is about the same as last year with the addition of a young Ayrshire bull which arrived here from Ontario in time for the field days last June, and seven females which arrived from Quebec in the late fall. The flock of Hampshire sheep has been reduced since last year. They were in great demand and good sales were easily made. The number of brood sows has also been reduced on account of the shortage of grain. We have sold a very select lot of young boars and gilts, and there is still a great demand for them, as the farmers locally are improving their swine herds by the addition of good breeding stock.

The men employed on the farm have given good and faithful service during the year, also the farm has had the usual splendid co-operation of the staff of the School of Agriculture.

REPORT OF THE PROVINCIAL FARM, VERMILION

(G. A. OGSTON, *Manager*)

The area of land operated was approximately 1,200 acres, 320 of which, known as the Scott Farm, is rented. In operating the farm, three main objects are kept in mind—first, to demonstrate forage crops; second, to rear pure-bred live stock, some of which is sold to farmers and breeders throughout the Province; and third, to provide feed for the stock.

FORAGE CROPS

Considering the very dry season, a good crop of hay was taken off in excellent condition. The new grass seedings, 60 acres in all, commenced the winter in fairly good condition. The pastures suffered considerably from the drought, their carrying capacity being reduced to about one-half of the previous year. During the season 70 acres were summerfallowed.

GRAIN CROPS

Approximately 3,670 bushels of oats were threshed from 171 acres, and 910 bushels of barley from 110 acres. No wheat was grown. Sixty acres of oats provided the green feed and ensilage, yielding about two tons per acre. Eight acres of sunflowers yielded six tons per acre.

HORSES

There are 36 head of horses on the farm, 33 of which are Clydesdales, either registered or eligible for registration. Seven foals were raised during the year, and nine mares were bred to the good stallion "Craigie Winsome Lad." Two were sent to be bred to "Forest Favorite," another Clyde stallion of merit.

CATTLE

The remainder of the Angus herd—one bull, five cows and three calves—were transferred to Olds. This leaves the Vermilion Farm with two herds, Shorthorns and Holsteins.

There are 36 head of Shorthorns in the herd headed by "Shirley Mariner," a three-year-old bull of Balmuchy breeding. This is "Shirley Mariner's" first crop of calves, which are growing out to be very promising. Five bulls and three females were sold as breeding stock. The Holstein herd, numbering 28 head, are doing very well. During the season 100% calf crop was dropped, all the calves sired by "Strathmore Lucius Sir Helio," the senior herd bull. An outstanding yearling bull, "Strathmore Flood Perfection," was purchased to use on the very promising Sir Helio heifers. Three bull calves were sold, and one three-year-old heifer was transferred to Olds.

HOGS

The Yorkshire herd, headed by two new boars, "Cottesmore Lad 82U" and "Olds 55U," have had a successful season. Sixty-two females and 33 boars were sold as pure-bred breeding stock. Two sows qualified in advanced registry.

SHEEP

The flock consists of 25 head of Suffolk ewes, headed by a University bred ram. Four rams were sold during the season.

POULTRY

The flock, composed of Rhode Island Reds and White Leghorns, was disposed of, and no chickens are at present being kept on the farm.

MACHINERY

A new tractor press seed drill added to the equipment makes the farm machinery line fairly complete.

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Date Due

OCT 19 '83		Due Cam MAY 09 1992
APR 30 '83		Due Cam JUN 17 1992
APR 29 RETURN		Due Cam AUG 11 1992
MAY 23 1990		Due Cam OCT 14 1992
JUL 09 1990		
JUL 10 RETURN		OCT 18 RETURN
DUE CAM AUG 23 '90		
AUG CAM OCT 02 '90		
SEP 19 RETURN		
DUE CAM JUL 03 '91		
Due Cam AUG 14 1991		
Due Cam OCT 04 1991		
SEP 25 RETURN		
Due Cam OCT 09 1991		
OCT 02 RETURN		
Due Cam NOV 13 1991		
Due Cam DEC 24 '91		
JAN 08 RETURN		
Due Cam FEB 14 1992		
Due Cam MAR 28 '92		

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